FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Cuban Molasses Output Lagging, Price Uncertain

NEW ORLEANS — Cuban blackstrap molasses production so far this season is well behind a year ago, the U.S. Department of Agriculture office here reports.

Production through Jan. 31 amounted to 7.6 million gallons, compared with 17.7 million during the same period last year. This represents a yield of 36.3 gal. of blackstrap per short ton of sugar, compared with 33.1 gal. averaged through Jan. 31, 1958. Total molasses production for the season is expected to exceed that of a year ago, however.

The slow movement into production is reported to have held up agreement on price between U.S. distributors and Cuba. Normally the price is established in February. It is reported that Cuba currently is holding out for 11¢ gal.

Puerto Rican molasses producers, meanwhile, have contracted to sell to distributors an estimated 2,150,000 gal. of 1959 crop blackstrap at 12¢ gal., Puerto Rican port.

The USDA also reported that

(Turn to MOLASSES, page 109)

David McVey Resigns As Manager of GMI Feed Division

MINNEAPOLIS—David H. McVey has announced his resignation as vice president of General Mills, Inc., and general manager of its feed division to return to the private practice of law in Minneapolis, specializing in taxation.

Mr. McVey joined General Mills in 1929 and served as head of the company's tax department from 1940 to 1948. He announced he will continue his association with GMI by serving as tax consultant to the company.

He plans to open his Minneapolis office on Aug. 1, 1959, after making a review of tax developments. He also plans an extended tour of Europe with his family.

C. H. Bell, president of General

(Turn to McVEY, page 4)

FEEDSTUFFS *Features This Week*

CONFINEMENT FEEDING: Suggestions on ration formulation and feeding programs for pigs in confinement are presented on **page 30.**

PELLETED RATIONS: Researcher discusses developments in making and using pelleted rations for cattle and lambs on **page 46.**

BULK FEED: The final articles in a series covering the development of bulk feed handling appears on **page 22.**

BUSINESS HINTS: Sales manager of Canadian firm lists "Seven Keys" to business success on **page 76.**

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Enzymes for Cattle Fattening Given Top Attention at Iowa

JAMES E. SHARON
Feedstuffs Staff

AMES, IOWA—Enzymes for fattening beef cattle emerged as the newest feed additive discovery and headed a whole new round of nutrition findings reported to more than 1,400 cattle feeders and others here March 10 at the annual Iowa State College Cattle Feeders "Hey" Day. What's more, the growth-promoting effects of certain additives discussed were said to be "additive," offering as much as a 35% increase in cattle gains.

These were some of the highlights:

● Iowa researchers said Agrozyme, a Merck & Co. bacterial enzyme dry premix expected to soon become commercially available to cattle feeders through feed manufacturers, produced the following effects when added to a standard Corn Belt fattening ration containing corn at 14% moisture content or less and stilbestrol in the supplement.

It brought a 12% increase in gains, increased feed consumption 4% and reduced feed requirements 7% for each pound of gain, reported Dr. Wise Burroughs, livestock nutrition re-

(Turn to IOWA, page 113)

Illinois Researchers Report On Swine Feeding Studies

By Special Correspondent

URBANA, ILL.—The highest average daily gains in pigs on test at the University of Illinois were found in animals fed complete ground mixed rations.

That's what Illinois livestock specialists told more than 1,400 Illinois Swine Growers Day visitors in Urbana March 5.

Effects of pelleting complete rations, reports indicated, were not consistent.

Other reports on Illinois research covered such things as feeding and management of baby pigs, feeder space and rations for finishing swine and recent findings on antibiotics for pigs.

G. R. Carlisle, extension livestock specialist, told of two experiments involving 190 weanlings pigs which were conducted to study methods of mixing and feeding rations and the value of two supplements for growing-finishing swine.

The complete mixed rations produced more rapid gains than did shelled corn-supplement mixes, he noted. Pelleting the complete mixed rations did not produce consistent benefits in the two tests.

Mixing shelled corn with meal or pelleted supplement produced about the same gains as corn and supplement fed free choice.

In one experiment, less feed was required per pound of gain for shelled corn-supplement mixes than for

(Turn to ILLINOIS, page 113)

Predict Favorable Wheat Move

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Favorable congressional action on a major amendment to the existing wheat provisions of the farm law is now forecast by responsible Senate sources at this session of Congress.

Briefly, such changes will be designed to effectively seal off Commodity Credit Corp. stocks of old crop wheat through long term storage arrangements — also the price support level for wheat to be reduced possibly as low as $1.45 bu., acreage restrictions modified and the existing 15-acre exemption eliminated.

The effort to seal off the surplus in the hands of CCC will not be total, but such CCC stocks as may be available will be negligible and have the total effect of putting the grain trade into the market for practically all supplies for domestic and export markets.

Exceptions to a total seal-off of CCC wheat would be sales under certain export and other programs.

Responsible Senate sources say that while the outlook for any formal final action on farm legislation at this session is remote, it is increasingly clear that something will have to be done for wheat at this session. On

(Turn to WHEAT, page 109)

Closed-Circuit TV Planned for AFMA Event

CHICAGO—"Production to Specification" will be the theme for a 75-minute live, closed-circuit, color television show especially produced for the American Feed Manufacturers Assn.'s 51st annual convention and sixth National Feed Show, May 11-13 in Chicago. In the telecast consumers, food buyers, processors, handlers and feed men will discuss problems and demonstrate techniques of producing and marketing meat, milk and eggs according to specification and their significance to the feed industry.

The new Eidephor, a Swiss-made television projector transmitting the largest color television image ever produced, will be used for the program. This will be its first showing in Chicago. A huge screen in the grand ballroom of the Conrad Hilton Hotel, site of AFMA's program sessions, will receive the image orginating from elsewhere in the city. AFMA convention delegates will be able to question "Production to Specification" participants and receive their answers on the screen. The projector is owned and being made available for the AFMA program by CIBA Pharmaceutical Products, Inc., New York.

"Production to Specification" will lead off the second morning speaking session at the AFMA's meeting. It will be followed by the first announcement of winners of AFMA's new animal agricultural award for farm magazine editors and the animal agricultural award for radio and television farm directors. The editor and farm director will be presented with commemorative plaques.

Concluding speaker of the morning

(Turn to AFMA, page 7)

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100 Companies To Exhibit At Feed Show

MILWAUKEE — More than 100 firms will occupy over 30,000 sq. ft. of exhibit space at the National Feed Show to be held May 10-13 at the Conrad Hilton Hotel in Chicago in conjunction with the American Feed Manufacturers Assn. convention.

Exhibits will include machinery, feed ingredients and other supplies and services. "Here on one floor the average feed man can put together the plant of his dreams and get the answers quickly as to cost, capacities and other vital information needed for planning future facilities," Eldon H. Roesler, manager of the show and publisher of the Feed Bag, said.

The feed show will open at 1 p.m., May 10, for an advance look. No registration badge will be required for admission the first day. The show will be open on other days at these times: May 11, from 11 a.m. to 7 p.m.; May 12, noon to 6 p.m.; May 13, noon to 3 p.m.

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EDITORIAL STAFF—George L. Gates, Editor; Roger Berglund, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

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BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1005 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

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Basic Differences

WHEN WILL VERTICAL INTEGRATION in livestock, egg and turkey production approach the scope of integration in the broiler industry? This question is very much on the minds of feed manufacturers and farmers, and the answer to it is being sought by all types of agricultural experts. No one, of course, can say for sure, although there certainly is plenty of reading and interpretation of road signs.

Concerned, too, with this question are the meat packers. A booklet published by the American Meat Institute reflects this interest in an analysis of integration trends as they relate to pork production. "Publicity given to broilers has generated the notion that the hog industry would in all likelihood follow the pattern which has been set in poultry," the article states. It then cites some of the differences between the two livestock products which the authors feel will have a bearing on the rate which integration has or could be adopted in the swine industry. The article lists these:

The poultry industry has succeeded in solving most of its disease control problems. Hog raising is still subject to many uncertainties in this respect.

The poultry industry, through technology, has turned broiler raising into a factory proposition. Hogs still are raised about as Mother Nature originally intended.

Egg-lay and hatching percentages have been increased sharply. The number of pigs raised per litter is still far below the current potential, and it is not yet subject to precise control.

Marked improvements in feed conversion rates have been possible in the case of broilers. The potential improvement in hogs has been harder to realize. The long run potential probably is quite substantial, however.

The life cycle of poultry is much shorter and the progeny rate is much greater than hogs. This has made it possible to breed changes into poultry much faster than hogs.

Labor requirements are less exacting and are more easily directed by outside management in the case of poultry than in the case of hogs.

Capital and land requirements are not as restrictive in broiler production as they are in the case of hogs.

Poultry meat was a luxury 20 years ago, so that a great expansion in consumption automatically followed declining costs of production. The consumption of pork can be increased with better quality and lower costs, but demand will be harder to expand from present levels.

Adapting poultry to consumer wants was relatively easy to accomplish. We're still a long way from satisfying consumers' tastes in pork.

Poultry merchandising at retail was very poorly done 20 years ago, so that improvement was easy. Finding new and better ways to interest consumers in all of the pork cuts from a hog is a constant challenge.

The poultry industry was a natural market for commercial feeds. This is not so true in the case of hogs. Hence, feed manufacturers will have more difficulty in integrating with the hog industry.

Broiler production is virtually a whole new industry, with 28,000 farms raising 90% of the output. Hogs are raised on about 2.5 million farms.

Broiler processing likewise is a new industry which historically was not tied to established production and marketing methods. Pork processing is geared to an established system where any significant change will be adopted cautiously.

The poultry industry generally has made great strides in production research and its practical application. The swine industry has lagged considerably behind poultry in this regard.

THESE COMPARISONS INCLUDE some statements which might be questioned. For example, while great progress has been made in attacking poultry disease, recurrent outbreaks in broiler areas may not have everyone agreeing that "most" of this problem is solved. And on the other hand, too, disease control in hogs has been showing much improvement in recent years.

On the whole, however, the comparisons comprise an accurate list of basic differences between the broiler and hog situations. The institute also makes this significant conclusion: "While the average hog farmer has not taken full advantage of the technological gains in hog raising that are available, the current potential efficiencies in production and marketing to be adopted are not as great as those which have stimulated the integration development in poultry."

Development of integration in swine need not necessarily depend on the same set of circumstances which propelled the broiler industry development. A different set of circumstances, or some stronger motivation, could possibly alter the outlook but, as of now, it appears that the basic differences point to slower going on swine integration.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Demand for formula feed continued rather dull this week. While some improvement has been noted over a slow February, it has been slow in coming and industry is generally looking forward to more activity. Buying has been conservative and weather has also been a factor. Starter feeds are showing some movement, but volume has not been sufficient to change the picture. The U.S. Department of Agriculture reported that the wholesale feedstuff price index as of March 11 had dropped to 87 from 88.3 the week earlier. A year earlier the index was 81.9. The feed grain index was 65.1, compared with 64.9 a week before and 65.2 a year earlier. (Ingredient prices in detail on pages 110-112.)

Northwest

Feed demand continued to show signs of improvement this week. Although some mill representatives said business is not quite what they had hoped for, it is ahead of the same period a year earlier. Demand was also showing more strength at the end of the week, they said.

Snow-blocked roads in part of the area were thought to be a deterrent to sales, but were not considered a major factor. Observers said it appears that feeders and dealers are still operating at low inventories in anticipation of lower prices.

Hog feed demand has been surprisingly good through the period, it was reported, and the starter movement is reported to be a little ahead of a year ago.

Prices for the coming week are unchanged to down slightly.

Southwest

Although most feed manufacturers said that business this week was no better than in the previous period, a few faint signs of spring were evident here and there in improved pig starter and chick starter sales. Some pickup was noted too in turkey feed as more poults were put down.

Total volume, however, did not bulk much larger than in the previous week and many plants were short of a full week's run, some only by a narrow margin. A few indicated that they were carrying over a backlog to next week, the first for some time, and this may presage a more general upswing shortly.

One reason given for the sluggish business is that dealers are not willing usually to buy much of anything on a down market such as has prevailed during most of February and March. Price weakness was again evident this week, and most mills reduced their quotations 50¢ to $1. In some instances no changes were made.

Northeast

There was no pickup in demand for formula feeds this week, and sales held at the reduced levels of the preceding week. Some improvement may occur next week on expected lower prices for many ingredients. Feeds containing corn, however, are not likely to share in the price decline.

Dairy feeds and egg mashes accounted for the bulk of the latest turnover, with demand for starting, growing and turkey feeds developing slowly. Broiler feeds didn't contribute too much to the tonnage.

One spokesman struck a gloomy note on the sales outlook for western New York. He said the area seems to be losing its prominence as a livestock and poultry feeding center. He noted that there had been numerous auctions of dairy herds recently and broiler growing has lost ground under competition from the South.

Some dairy farmers don't know whether to expand their operations—a costly process—to increase their profits or give up their business altogether, he said.

Egg prices were off again. Broilers were unchanged to a shade lower, with a top in the East of 18½¢ lb., a low of 15¢ and an average range of 16½@17¢. Milk, it was said, should hold up because it's still "quite a ways to grass."

The ingredient market was irregular during the week. Corn was up 1¢ and lower levels aren't expected for five weeks. Oats were unchanged; feed wheat was off 1 to 2¢ and barley was about unchanged.

Animal tallow gained ⅛ to ¼¢ lb. in the first price rise in quite a while.

Soybean oil meal took a licking again, with both 44% and 50% soy down $4 to $5. Gluten meal was off $2. Cottonseed oil meal held unchanged and linseed oil meal was about unchanged.

Meat scraps declined $2.50. Fish meal was about steady but the market's undertone was on the weak side.

Distillers' grains were up $1 or more and brewers' grains advanced 50¢ to $1 but both are scarce.

Millfeeds gave ground under quiet demand.

Running time of formula feed manufacturers averaged 36 hours last week.

Southeast

The broiler feed business seemed to have a better tone this week, and most manufacturers look for it to improve during the coming weeks. Broiler prices advanced 1¢ lb. to 16¢ and 17¢ f.o.b. the farms, which should enable good growers to realize a little profit.

Chick placements continue to in-

(Turn to MARKETS, page 115)

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OFFICIAL GETS PINK POODLE WELCOME—Clarence L. Miller (left center), assistant secretary of agriculture, is greeted by Del Ellis (right center), president of the Colorado Grain, Milling & Feed Dealers Assn., and the Powers Pink Poodle Posse on his arrival at the Stapleton airfield in Denver where he spoke to the Colorado dealers' convention. The poodle brigade is the official greeter of the Colorado Centennial.

Agriculture Official Sees $10 Billion Surplus by 1960

DENVER, COLO.—An outlook for more than $10 billion in surplus agricultural commodities held by the U.S. government can be expected by July, 1960, if the present price support system is retained unchanged.

This was the report of Clarence L. Miller, assistant secretary of agriculture, in a "Washington Report" given at the annual convention of the Colorado Grain, Milling & Feed Dealers Assn. recently at the Shirley-Savoy Hotel here. (Also, see earlier story in Feedstuffs, March 7.)

He was one of nine speakers on a program which attracted more than 650 persons from 14 states to the annual meeting.

"Price support levels have been maintained at figures that encourage production, and acreage controls have not succeeded in braking the output," he said. "The current inventory of surpluses is at an all-time high of $7.6 billion."

Congress has not seen fit to impose a maximum on price support money one individual can receive, he pointed out. But he called this a "wise" policy. "I don't believe in penalizing a man just because he is a large operator," Mr. Miller said.

Three possible courses of action have been proposed to Congress by the administration, Mr. Miller pointed out. The first of these is to continue the present support price program and allow surpluses to grow. The second is to continue the present program, but pass legislation making acreage and other controls more effective in limiting farm production. As a third choice, the administration suggests adopting a program based on support prices pegged on a percentage of the market price set during previous years.

Under the third proposal, price supports would be set at a level of 90% of the average market price during the past three years instead of the 75 to 80% of parity now used, he said.

He said proposals to give farmers direct support payments would be "tremendously expensive." Under this program, direct payments would cost $8 to $12 billion annually, "far in excess of what our farm support programs are costing today."

Feed Microscopy

"Techniques in Determining Ingredients in Formula Feeds" was the topic discussed by Clyde E. Jones, chief chemist and microscopist for the Colorado Department of Agriculture.

Pointing out that such techniques are related to the microscope in one way or the other, Mr. Jones said feed microscopy may not be the answer to all the problems of adulterants and quality control.

"But if your operator isn't a very careful person, we can tell what he had for lunch," he said.

Although feed microscopy is only relatively few years old, it is recognized as an official and vital method of analysis in many states, Canada, Mexico and some South American countries, he said. It provides a means of identification not duplicated by chemical means.

Feed microscopy does require training, but not the long and complicated training many other phases of analysis do, he pointed out. He calls it a "simple, straightforward system, and the equipment required is neither large nor exceedingly costly. It provides tangible, photographic and permanent proof of any low-grade products or deliberate malpractices, as well as an indication of materials of high quality."

Pointing out some of the ways feed manufacturers are using microscopy, he cited the practice of one firm of testing samples of meat scraps from incoming shipments. Each incoming truck was held about 10 minutes while the quality was checked. Poor quality material was sent back. This company reported an increase in quality after this program was initiated, he said.

Several other companies report that they use feed microscopy to check on their competitors, but mainly it is used by the quality control departments to check themselves so that the feed company's products do not appear on the state analysis reports, he reported.

Other speakers were Robert L. Knous, Lt. Gov. of Colorado; Allen R. Funk, program specialist for the Colorado Department of Agriculture; Donald E. Smith, director of the Kansas City Commodity Credit Corp.; William F. Brooks, president of the National Grain Trade Council; Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn.; Eldon H. Roesler, publisher, the Feed Bag, and Paul Mattson, manager of the agricultural products division, Morton Salt Co.

TEXAS CONVENTION DATES CHANGED

FT. WORTH—Opening day of the annual convention of Texas feed manufacturers and grain and feed dealers has been changed from April 23 to April 24, according to Ben E. Schmitt, secretary of the Texas Feed Manufacturers Assn.

(Editor's note: The listing of this meeting in the Convention Calendar on page 82 is incorrect. The previously announced date is shown.)

A major portion of the convention now set to run April 24-25, will be devoted to merger of the Texas Feed Manufacturers Assn. with the Texas Grain & Feed Dealers Assn. The meetings are to be held at Hotel Texas, Ft. Worth.

Nearby Oilseed Options Take on Softer Tone

MEMPHIS—Oilseed meal futures were mixed on the Memphis Board of Trade at the close March 11 compared with March 4.

A steadily deteriorating cash oil meal demand was reflected in a softer tone to the nearby options of the futures market. Despite unsettled conditions in Berlin and Iraq, buying was never aggressive.

Supplies remain ample in the nearby shipment positions, with the demand termed sluggish.

The seasonal increase in mixed feed business failed to develop to the extent that was anticipated, thus supplying a bearish influence to the oil meal market.

Forward months made the gains in futures. This resulted from traders spreading into the more deferred months and having to pay higher prices to get into these options.

Unrestricted soybean oil meal closed March 11 85¢ lower to $1.25 ton higher, Eastern Trunk Line soybean oil meal unchanged to 25¢ lower, bulk solvent cottonseed oil meal unchanged to $1 lower, and sacked old process cottonseed oil meal unchanged to $1 lower.

Yieldmor Turkey Clinic Scheduled

PIQUA, OHIO—The annual turkey management and disease control clinic sponsored by Yieldmor Feeds, Inc., will be held at the Elks Ballroom March 19.

Among the speakers will be Howard E. Wildey, secretary of the Ohio Turkey Assn., "Ohio's Turkey Industry"; W. S. Thompson, feed control official for Ohio, "Problems of Custom Mixing"; Dr. C. Gale, Ohio Agricultural Experiment Station, "Turkey Disease Problems"; Dr. M. G. McCartney, Ohio Agricultural Experiment Station, "Managing Turkey Breeders for Year Around Production," and Martin M. Bonar, manager, Miami Valley Production Credit Assn., "Financing Turkeys."

The program also will include two panel discussions, covering turkey management and disease control.

Feed Mill to Be Built By Oregon Cooperative

HERMISTON, ORE.—Construction of a new feed mill by the Pendleton Grain Growers probably will start by June 1, James Hill, Jr., PGG manager, reported at the group's 29th annual meeting.

The plant will cost between $800,000 and $1,000,000. Mr. Hill said arrangements have been made for financing the project. Facilities will be included for processing feeds as well as corn drying and handling.

The cooperative now is operating a new hay pelleting and wafering plant. The new feed mill will be adjacent to it.

Elmer Ziegenhagen Resigns ADM Post

MINNEAPOLIS — Elmer Ziegenhagen has resigned as director of sales of the Archer Feed Division, Archer-Daniels-Midland Co., it was announced this week by Clyde C. Meinhoefer, division manager and assistant vice president of ADM.

Mr. Meinhoefer expressed sincere regret at Mr. Ziegenhagen's departure. Until a successor is named, Mr. Meinhoefer will assume responsibility for direction of the feed division's sales activities.

Mr. Ziegenhagen, with ADM for 14 years, previously held positions with the company in nutritional research and as sales manager. A graduate of the University of Minnesota with a master's degree, he also served on the Minnesota staff in research and extension and for a period of eight years was a vo-ag teacher.

Clark Yager Robert Alexander

Clark Yager to Retire From Post at Pillsbury

MINNEAPOLIS — Clark Yager, general manager of the Pillsbury Co.'s soy division and director of procurement for the feed division, will retire Sept. 1.

He will be replaced by Robert E. Alexander, director of Pillsbury's business analysis department. In line with a company policy for training executive replacements, Mr. Alexander will begin work on his new assignment immediately, the company announced.

Succeeding Mr. Alexander as director of the business analysis department is James W. Taylor, formerly assistant director of the department.

Mr. Yager joined Pillsbury in 1951 when the Minneapolis firm acquired the Ballard & Ballard Co. He joined Ballard & Ballard in 1926 and was formerly vice president and secretary of that firm.

Mr. Alexander joined Pillsbury in 1950 as a food buyer trainee. He served as a price analyst and assistant director of the business analysis department before becoming director in 1954.

Mr. Taylor joined Pillsbury in 1957 following graduation from Kansas State University graduate school of agricultural economics.

N.H. Bill Would Hike Registration Fee

CONCORD, N.H. — House Bill 74, which would increase registration fees for various brands of commercial feeds, and House Bill 73, which would boost fees for registration of commercial fertilizers, have been passed by the House of Representatives in the New Hampshire legislature here.

McVEY

(Continued from page 1)

Mills, commented on Mr. McVey's decision to return to private law practice as follows:

"It is with sincere regret that we accept the resignation of Dave McVey. Through 30 years of service, he has contributed importantly to a wide variety of General Mills activities—as tax specialist, assistant to the president, and as director of operations and general manager of the feed division. His decision to return to tax consultation is a loss not only to General Mills but to the entire feed industry.

"Under Mr. McVey's direction, the feed division has grown in sales and service. The company has launched specific programs to help farmers upgrade the quality of their products and expand their markets. We plan to continue and expand these programs."

General Mills has not announced a successor to Mr. McVey.

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Convention for Ohio Dealers Shows Industry's Complexity

By DON E. ROGERS
Feedstuffs Staff

COLUMBUS, OHIO—The complexity of the feed industry was evident here during the 18th annual convention of the Ohio Grain & Feed Dealers Assn., Inc., as points of interest ranging from controlling drugs in feeds to checking the pulse of the elevator business were presented in discussions.

Topics for commentary included what to consider in measuring business success, opportunities in bulk feed, control of drugs in feeds, the relationship of the veterinarian to the feed industry and grain surplus problems.

(A report on the election of officers at the Ohio convention appeared in the March 7 issue of Feedstuffs.)

PROFIT FACTORS—"How do you know whether your business is healthy or can continue to be successful over a period of time?" asked Dr. John Sharp, department of economics and rural sociology, Ohio State University.

He referred to a university research project in which elevator managers and owners participated to find a method whereby a financial statement could be more effectively used to point out weaknesses in business structure or operational procedure.

"I like to think of profit as being the pulse of your business," he said. "If the profit is not there, you will start through a whole series of operations to try to determine why there isn't profit."

He discussed, individually, "ingredients" of an elevator operator's statement that merit investigation.

Sales—Dr. Sharp pointed out that investigations of data showed that sales are "generally accompanied by a corresponding increase in expenses" when we compare different sized firms. Thus, in terms of profit per dollar of sales, we find no advantage for the larger unit over the smaller unit. For the individual given plant, sales increases can be advantageous since, within the limits of existing facilities, only operation or variable costs will increase. When sales increase to a point where new facilities are needed to provide the same services we move back to the high level of costs since additional fixed costs are added to each unit of sale.

Facilities—According to an analysis of statements from elevator operators, buildings and equipment have been substituted for labor to a point where they have reached saturation for the average firm, Dr. Sharp said. "This is not necessarily true for the individual plant that needs additional facilities to provide the services that its customers demand," the university economist commented. "Don't let dreams and wild ambitions dictate your physical plant. Get the cold facts and plan from there."

Accounts receivable—It was noted by the speaker that the major difficulty caused by accounts receivable in many operations is that they are a fixed asset, with an annual depreciated amount called a reserve for doubtful accounts.

He said many allied businesses are beginning to "factor" their accounts. This results in a two-price system whereby the factoring company (which makes it a business of buying accounts receivable) will pay a cash price for the account, equivalent to the cash price of the goods, and collect from the customer the charge price.

Labor—The productivity of labor was described as the "key to success." Dr. Sharp brought out that labor accounts for 57% of all operating expense for country elevators, and 88% of the variation in operating expenses can be attributed to labor.

"When relating the alternative uses of labor we find that labor only explains 26% of the item called 'other operating income,'" he said. "Therefore, it should be possible to increase 'other operating income' without a corresponding increase in expenses and without a substantial increase in fixed assets, but by merely better utilization of labor and machinery, which in return would lead to higher net profit per dollar of sale."

Another point found in analyzing the financial reports was that when fixed assets are increased labor cost per dollar of sales did not decrease. "No statistically significant measures could be developed that would indicate that the size or type of business has any effect on 'other operating income,'" Dr. Sharp explained.

Management—Dr. Sharp said that when financial statements are again obtained from elevator operators this year there will be incorporated a list of questions that may assist in determining the limiting factors on management that are associated with a profitable business.

He recommended that elevator managers or owners attempt to establish a limited system of cost accounting to assist in measuring the efficiency of their labor force and equipment.

"A manager must do intelligent buying. This means buying at the lowest available price and selling in such a manner as to return an adequate gross margin," Dr. Sharp said. "After the adequate gross margins have been established, it becomes a problem of managing your labor force and equipment in order to yield the highest net return.

"You are a magician if you can do this while running the feed grinder. It has often been said a good manager gives himself time to manage, to plan his attack for the year, and to organize his sales and service programs for the coming year."

BULK FEED—Stanley Odle, district sales manager, Allied Mills, Inc., Ft. Wayne, Ind., offered the opinion that bulk feed has advantages for both the dealer and the feeder.

Three factors have brought about "the interest in and need for bulk feed," according to Mr. Odle. They are: "(1) Efficiency at manufacturer's level, dealer's level and feeder's level; (2) complete feed and integration, and (3) demand for more and better service."

Before considering bulk, Mr. Odle said, a dealer should already be rendering good services, should have grain storage, should be promotional minded and should have good personnel.

"Bulk will not perform a miracle for you," he said. "You must have other things along with it. Sales volume is still the key to success."

He advised dealers to go into bulk feed handling first, and then teach customers the whys and hows of bulk feeding. "If you are considering bulk, try to get it in ahead of competition. There are many advantages in having it first."

The speaker believes that bulk feed will become "one of your most important services to your customers" and that "it will certainly eliminate the small bag dealer."

Before going into bulk feed handling, the dealer should, said Mr. Odle, plan for future business by put-

(Turn to **OHIO**, page 109)

OHIO GRAIN DEALERS ELECT—George Moorhead, left, Moorhead Elevator Co.,Leipsic, was elected president of the Ohio Grain & Feed Dealers Assn., at the 80th annual convention in the Neil House at Columbus. Other officers, left to right, are: Carl A. Pitsick, Early Elevators, Inc., Lytle, second vice president; James Kile, Fred Kile & Son, Inc., Kileville, treasurer; George Forrester, Forrester Grain Co., Toledo, corporation secretary; Harry E. Huffman, Ada (Ohio) Farmers Exchange Co., first vice president, and G. E. O'Brien, Greenville, executive secretary.

FEED SHIPMENTS SHOW INCREASE IN CANADA

OTTAWA—Canadian shipments of primary or concentrated feeds increased nearly 21% in 1958 to 437,546 tons from 362,845 in 1957 and almost 28% from 342,760 in 1956. Secondary or complete feed shipments increased over 20% to 2,506,704 tons from 2,087,238 a year earlier and nearly 27% from 1,977,364 two years earlier.

The year's shipments of all "other" animal feeds declined 2.9% to 516,140 tons from 531,293 a year earlier and 36% from 807,798 two years earlier.

December, 1958, shipments of primary feeds were up to 41,545 tons from 34,285 in the same month of 1957, secondary feeds to 224,591 tons from 180,700 and all "other" animal feeds to 46,782 tons from 42,856, according to the Dominion Bureau of Statistics.

Ohio Group Supports Rotary Fund System

COLUMBUS, OHIO—The Ohio Grain & Feed Dealers Assn., Inc., supported continuation of the rotary fund system of financing with a resolution at its recent convention here.

According to the resolution, the Ohio Department of Agriculture, under the rotary fund system, "has made great progress in the performance of its duties and has been of ever increasing benefit to agriculture in the state."

The association also went on record favoring support of research agencies seeking to develop new outlets for farm commodities as a means for the reduction and economical use of surplus crops. A resolution urged the Ohio Agricultural Experiment Station to place more emphasis on expanded uses for Ohio agricultural products.

Also encouraged by the association in a resolution was further study of freight rates "so that ultimate beneficial and equitable rates are available to all members."

New Georgia Poultry Exchange To Begin Operating

By Special Correspondent

GAINESVILLE, GA.—The newly organized Georgia Poultry Exchange, Inc., will start operation at Gainesville March 31, Ray Fechtel, chairman, told members of the Georgia Feed Dealers Assn. attending a recent state-wide meeting.

The exchange, modeled closely after one operated in the Delmarva area, has been set up as a non-profit marketing cooperative association, and will sell poultry, on auction, of participating members only, Tom Hodge, the manager, explained to the feed dealers.

He added that exchange memberships at $100 are still available and announced additional applications had been received just prior to the dinner and "would also be accepted afterwards."

Not a "War" Move

Mr. Hodge said the formation of the exchange, as an auction, "is not to be construed as a 'war' on processors," but rather as a long-needed and essential move to bolster broiler prices and stabilize marketing practices to provide "adequate profit margins for producers, contractors and feed dealers."

Several members, during the course of open discussion from the floor, pointed out that the auction, when in full operation, will enable the processor or other buyers to secure a quality bird with more uniformity in size and weight, since advance information on each flock or house will be available for the prospective buyer.

Mr. Hodge, answering questions about the method of operation, said the exchange will operate four days each week, with the exchange's inspectors checking flocks at least two days prior to the sale date. He added that copies of a uniform report on size, condition, quality, weights, and other data for each flock will be available to the buyer. Actually, the birds will never be brought to the exchange, he said, but will be cooped at the seller's farm and taken directly to the buyer's plant.

Smith L. Johnston, Jr., former president of the Georgia Poultry Federation and one of the incorporators of the exchange, told the feed dealers that "volume is essential to the success of the project"—a figure generally discussed at five million broilers each week, or approximately 65% of the North Georgia and surrounding area production.

Favorable Comments

In general, the auction is looked upon favorably, a Feedstuffs reporter learned prior to and after the meeting in talking to hatcherymen and processors as well as feed dealers in Georgia.

(Turn to **GEORGIA**, page 109)

Borden Co. Division Given New Name

NEW YORK—After more than 20 years of continued growth and diversification, the special products division of the Borden Co., New York, has been given a new name, it has been announced. The division is now known as Borden Special Products Co., division of the Borden Co.

Headed by Dr. J. R. Kunz, the company incorporates six separate operations. These include the feed supplements department, which makes and sells supplements to poultry and animal feed manufacturers for use in finished feeds, and the soy processing company, which processes and sells soybean meal and soybean oil for use in industrial and edible products.

The other four operations included in the new company are the flavor department, pharmaceutical division, Tykor products division and the Whitson products division.

Joseph N. Pless

Joseph Pless Forms Own Memphis Firm

MEMPHIS, TENN.—Joseph N. Pless has announced the formation of his own company, to be known as Joe N. Pless Co., as successor to Pless & Sheahan, Memphis. Robert F. Sheahan, who was associated with Mr. Pless in the latter firm, died Feb. 14.

The new firm will continue to operate in the same offices in the M & M Building, 198 S. Main St., Memphis, and will represent practically the same feed ingredient manufacturers as did Pless & Sheahan.

Before joining Mr. Sheahan in the formation of their firm six years ago, Mr. Pless was for 15 years nutritionist and chemist for Royal Staff-o-Life Mills, Memphis, now part of Nutrena Mills. He is well known in the southern feed industry.

The Joe N. Pless Co. will represent Alabama Calcium Products Co.; E. I. du Pont de Nemours & Co., Inc.; Harshaw Chemical Co.; Heterochemical Corp.; Nopco Chemical Co.; Philip R. Park, Inc.; Chas. Pfizer & Co.; Tamms Industries; Soft Phosphate, Inc.; Taste Engineering, Inc.; Rhodia, Inc.; United Salt Corp., and Western Condensing Co.

GIVE HIM ADVICE HE'LL APPRECIATE

Remind him to order Morton T-M Salt. See page 45.

Broiler Egg Set Continues to Climb

SALISBURY, MD.—The national egg set in recent weeks has been going up and up. Last week the egg set climbed again. The 22 important broiler producing states set 50,694,000 eggs. This was 2% more than the previous week and 24% above the corresponding week a year ago.

Broiler growers in the 22 states placed 34,722,000 chicks. This was 3% more than the previous week and 14% above the corresponding week a year ago. Increases were reported in 14 states—decreases in eight states, compared to the previous week. The largest increases from the previous week occurred in Texas, Georgia, Arkansas and Mississippi.

The price of broilers slipped slightly in Delmarva. The average price paid on the farm was 16.92¢. A week earlier the price was 17.30¢.

FIRE DAMAGES MILL

HAMILTON, ONT.—Fire damaged the Lynden Cooperative Mill here recently, causing losses estimated at $20,000.

AFMA

(Continued from page 1)

program will be an international affairs speaker, Dr. Nicholas Nyaradi, director, Institute of International Studies, Bradley University. His talk is entitled "Free Enterprise or Disaster." Dr. Nyaradi, born and educated in Hungary, but now an American citizen, was executive director of one of the largest banks in Hungary. Active in anti-Nazi work during World War II, he was elected to the postwar coalition government by anti-Communists. As minister of finance, he spent seven months in Russia negotiating reparation claims and becoming acquainted with more Soviet Politburo members than any other statesman. Fleeing Hungary in 1948 because of Soviet pressure, Dr. Nyaradi came to the U.S. and authored magazine and newspaper articles and the book "My Ringside Seat in Moscow."

The first morning speaking program at the AFMA convention will feature business management problems. Chairman of the AFMA board, I. S. Riggs, vice president, the Quaker Oats Co., will discuss AFMA's service role in the unfolding and expanding feed industry.

Role of Small Business

D. G. Williamson, secretary, Conference of American Small Business Organizations for the past eight years, will speak on "What Chance Has Small Business?" An advocate of small business growth and expansion, Mr. Williamson is also president of Williamson Adhesives, Inc., Skokie, Ill., a director of two national trade organizations in his field, a past president of the Chicago Junior Association of Commerce and Industry and an officer in many local, state and area civic, religious and welfare organizations.

Mr. Williamson's address will be preceded by a talk from an executive of a national business corporation, to be announced later; recognition to leaders of the Association of American Feed Control Officials, and the presentation of commemorative plaques to three college scientists. The research workers were selected by their respective science associations to receive AFMA's $1,000 awards for outstanding research in dairy, poultry and animal nutrition. Dr. E. I. Robertson, John W. Eshelman & Sons, and chairman, AFMA nutrition council, will present the plaques.

The sixth National Feed Show will open each afternoon, May 10-13. On display and demonstrated will be hundreds of thousands of dollars worth of feed manufacturing and distributing equipment, supplies and services.

May 11 is the day set aside for meetings of the AFMA board of directors, executive traffic committee, nutrition council and committee of purchasing agents. Except for a portion of the purchasing agents' meeting, attendance at other sessions is limited to members of the respective groups.

AFMA officials are estimating an attendance of more than 2,500 feed men, suppliers, college personnel, government officials and editors of the farm press, radio and television.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending:	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
January 3	1,211	669	873	772	152	685	2,046	1,840
January 10	1,180	531	737	741	141	765	1,880	1,838
January 17	1,251	532	570	657	189	732	1,797	1,688
January 24	1,274	594	753	730	114	723	1,978	1,746
January 31	1,280	576	709	639	181	738	2,111	1,741
February 7	1,286	648	778	613	120	800	1,837	1,902
February 14	1,272	668	724	744	130	848	2,063	1,776
February 21	1,229	606	737	877	168	865	1,769	1,967
February 28	1,154	601	843	816	176	829	1,927	1,814
March 7	1,194	501	835	765	197	849	1,962	1,941

Week ending:	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
January 3	1,014	601	2,870	324	5,862	298	2,871	1,999
January 10	1,092	557	2,687	331	5,744	255	2,904	2,051
January 17	1,016	437	2,446	305	5,825	205	2,766	1,944
January 24	1,058	537	2,659	290	5,742	198	2,884	2,025
January 31	1,101	532	2,846	316	5,943	178	2,964	2,059
February 7	1,094	572	2,932	363	6,233	236	3,104	2,046
February 14	1,168	580	3,084	404	6,270	205	3,263	2,109
February 21	1,129	586	3,070	373	6,419	239	3,202	2,302
February 28	1,269	700	3,021	360	6,626	246	3,228	2,308
March 7	1,295	680	2,959	357	6,888	283	3,278	2,469

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1959	Total 22 areas 1958
January 3	3,306	477	2,277	269	236	1,052	31,409	26,741
January 10	2,881	440	2,223	310	300	1,196	30,534	27,033
January 17	3,073	430	2,079	284	309	1,226	29,546	26,816
January 24	2,998	397	2,227	342	274	1,118	30,356	28,539
January 31	3,172	433	2,136	375	205	1,108	31,343	29,826
February 7	3,044	396	2,127	339	240	1,074	31,573	29,209
February 14	3,276	412	2,214	382	215	1,163	32,756	29,495
February 21	3,377	511	2,242	393	234	1,130	33,258	30,253
February 28	3,392	509	2,178	343	283	1,164	33,787	30,270
March 7	3,580	450	2,471	345	267	1,176	34,722	30,406

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CAPITAL COMMENT

BY JOHN CIPPERLY

Workshop

WASHINGTON—This week saw a repeat of last year's successful performance of the Grain & Feed Dealers National Assn. "Washington Workshop," wherein the secretaries of state associations meet with top government officials of administrative agencies and congressmen and senators from throughout the nation.

Attendance of secretaries and presidents of state associations exceeded 35. At the formal dinner and congressional reception there was a congressional attendance numbering more than 70.

In the Washington Workshop, Alvin E. Oliver, GFDNA executive vice president, has hit on a delicate harmonization between his big grass roots grain trade organization and the so-called "big city" folks of the Washington bureaucracy and Congress. The workshop last year was a good indication of success, and the "sell-out" this year now appears to have established the workshop as a top annual feature of his organization.

At the workshop sessions there is on open airing of state and national trade problems. Officials of the U.S. Department of Agriculture and other government agencies participate.

Procedures

The sessions represent a democratic process wherein Mr. Oliver sets before the secretaries and other GFDNA executives the star cast of the government, and in many instances members of Congress, and whereby the secretaries get first-hand policy decisions and the reasons behind the decisions. It also gives them a first-hand chance to express in their own words to government officials their individual and state problems. It represents business democracy in a vital sense.

While the major honors belong to Mr. Oliver for this innovation in trade association activity, there are many credits which must be noted. For example, Mr. Oliver has had the vigorous backing of the GFDNA president, Madison Clement, who sensed the virtue of the plan and sent the workshop show along the way with his enthusiastic endorsement and vigorous support.

A credit line is also due to R. B. (Ray) Bowden, Mr. Oliver's predecessor as executive leader of GFDNA who in nearing his retirement, had the fine delicate judgment in selecting as his successor Mr. Oliver.

Not only has Mr. Oliver set a high standard for GFDNA operations, but he at the same time is building strength throughout the organization. In his selection of Herbert Sharp as secretary and treasurer of the GFDNA, he brings to the organization an economist with a fine background and a penetrating insight into the effects of government programs on the future of the grain industry, and specifically on the big grass roots grain organization.

Dairy Supports

WASHINGTON — As Secretary Benson this week announced the level of price support for dairy products at 77% of parity, compared with 75% for 1958, he effectively refuted his critics who declared that in his advocacy of flexible price supports he always "flexed on the downside."

Although the percentage level of parity support for dairy products was shifted, the dollars and cents level of support will remain unchanged at $3.06 cwt. for manufacturing milk and 56.6¢ lb. for butterfat during the marketing year beginning April 1.

In justification of his flexible decision, Secretary Benson noted that total milk production had declined in 1958 and that dairy cow numbers were also on the slide.

Even under Secretary Benson's decision last year of lowering supports the disaster widely forecast by opposition political interests from dairy states has failed to develop and, in fact, the consumption of such dairy products has expanded significantly.

LAYER NUMBERS, RATE OF LAY CLIMB

WASHINGTON — The number of layers March 1 was up 3% over a year earlier, with increases reported in all regions except the north Atlantic. The March 1, 1959, figure was 315,663,000, compared with 307,425,000 on the same date last year. Rate of lay March 1, 1959, was 59.8 eggs per 100 layers, compared with 55.1 March 1 last year—an increase of 9%. All regions showed increases, with the south Atlantic and south central areas having the largest jumps.

New Drug Announced For Treating Mastitis

NEW YORK — A new antibiotic, thiostrepton, has been developed as "the answer to the elimination of penicillin residues in milk," according to a statement by Fred J. Stock, vice president of E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp. He said that the drug, for treating mastitis, is now available to dairy farmers throughout the country.

Mr. Stock said thiostrepton was developed by Squibb scientists in response to surveys which "pointed up the health hazards to the public of traces of penicillin found in milk supplies.

"This new antibiotic's utility is unique because it has never been used in human therapy," Mr. Stock said. "It could not contribute to the development of strains resistant to its effectiveness in human beings. Additionally, rigid testing has shown that 72 hour traces of thiostrepton in milk are non-existent."

Trade-name for the drug is Neothion.

New Omaha Feed Club Elects Officers

OMAHA—The new Omaha Feed Club held its first meeting and elected officers recently.

Elected president was Ed Hahn, manager of the Cereal Byproducts Company here.

Other officers:

Leonard Chittenden, Allied Mills, Inc., vice president; John Marley, Nixon & Co., vice president; M. E. Peterson, Omaha Flour Mills, treasurer; Max Mason, Thompson-Hayward Chemical Co., secretary.

Nearly 60 persons connected with the industry attended the meeting at the Birchwood Club.

N. M. Feed Group Elects Officers

ALBUQUERQUE, N.M. — Clarence Worley, Clovis, N.M., was elected president of the New Mexico Feed & Grain Dealers Assn. during the organization's recent three-day annual convention. (An earlier report on the convention appeared in Feedstuffs March 7, page 8.)

Mr. Worley succeeds Charles B. Boreing, Roswell, N.M., who was named vice president. H. B. Hening, Albuquerque, was re-elected secretary-treasurer, and Parley G. Jensen, also of Albuquerque, will remain as executive secretary.

New directors are Howard K. Ball, Silver City, N.M.; Clayborn Wayne, Hatch, N.M.; E. H. Beckner, Clayton; W. E. Bush, Liberal, Kansas, and O. L. Bush, Lubbock, Texas. W. E. Bush and O. L. Bush are associate member representatives from out of state.

At the convention the group unanimously endorsed voluntary union membership legislation, more popularly known as "right-to-work."

The dealers urged the New Mexico national delegation to keep the national budget within means, and urged the state legislature to appropriate funds for agricultural research.

N. C. Bill Pertains to Feed Inspection Tax

RALEIGH, N.C.—A bill introduced in the North Carolina legislature would exempt custom-mixed feeds from the state's inspection tax on commercial feedstuffs.

Sponsored by Rep. Hugh Johnson, Jr., Dublin, N.C., and others, the bill would benefit farmers who grow or buy their own grain and mix, or have it mixed with a concentrated commercial feeding stuff as a base for feeding their own livestock, domestic animals or poultry, officials said.

The North Carolina inspection tax on commercial feedstuffs is 25¢ per ton. The amendment proposed in Rep. Johnson's bill specifies that it would not apply to feedstuffs "furnished, supplied or used for growing or feeding under contract."

Rep. Johnson said the inspection tax on commercial feedstuffs which some farmers use as a base for their own mixture is included in the price of the base product, and hence is paid by the farmer.

Chicago Club to Hear Discussion on Seaway

CHICAGO—The St. Lawrence Seaway will receive the attention of the Chicago Feed Club at the next meeting, scheduled for March 20 at the Merchants & Manufacturers Club in the Merchandise Mart here.

J. M. Arnold, Chicago regional port district, will discuss the many ramifications and effects of the opening of the seaway on business and civic endeavors. The social hour will begin at 6 p.m., with dinner at 7.

Undergoes Surgery

MINNEAPOLIS — Norman E. Dewes, president of Pro-Vid-All Mills, Litchfield, Minn., was reported to be making "remarkably good progress" in a hospital here this week following brain surgery March 4. A blood clot resulting from a whiplash injury suffered in an automobile accident Jan. 20 was discovered to be the cause of a paralysis of the left side of his body. He had gone to work after the accident and had been at work about two weeks when recurring headaches and then the paralysis put him in the hospital. His wife, who suffered two fractured vertebrae, is recovering at home and is now "coming along very well."

W. Alex Donnelly New President of National Alfalfa

KANSAS CITY—John R. Porter, chairman of the board, National Alfalfa Dehydrating & Milling Co., has announced the election of W. Alex Donnelly as president of the company.

Mr. Donnelly succeeds Henry A. Hofmann, who resigned as president this week. Mr. Hofmann is head of Hofmann Industries, Sinking Springs, Pa.

Mr. Donnelly has been district manager for National in charge of operations at the Midland, Kansas, plant since 1954. He became associated with National in that year through the purchase of Cerophyl Laboratories, Kansas City, one of the pioneer firms in the dehydrating business. Mr. Donnelly was president of Cerophyl from 1943 to 1954.

Prior to joining Cerophyl, Mr. Donnelly was associated with the Quaker Oats Co., which owned an interest in Cerophyl. He served as sales manager in Canada for Quaker and then for a number of years was in the foreign department of the company in its Chicago headquarters.

Mr. Donnelly has been active in the American Dehydrators Assn. He was president of the group during 1957 and a director for several years. Mr. Donnelly, who lives in Lawrence, Kansas, near Kansas City, for the present will make his headquarters in National's Kansas City office.

In announcing the election, Mr. Porter said: "Mr. Donnelly's wide experience in the dehydrating field gives him a splendid understanding of the problems and objectives of our company."

New Penicillin Product Announced by Lilly

INDIANAPOLIS, IND.—A specially-coated procaine penicillin which is claimed to have improved stability has been announced to the feed industry. The new product is used to coat each penicillin crystal to preserve its stability under feed manufacturing and storage conditions, according to the agricultural and industrial products division of Eli Lilly & Co.

Developed by Lilly, the product is sold under the trademark Micro-Pen. It helps, Lilly announced, solve the stability-particle size problem by providing smaller particles, each coated to maintain its stability.

In Lilly experiments with broiler feeds, Micro-Pen retained as much or more antibiotic activity than the other penicillins of greater particle size in both pelleting and Arnoldization tests, according to the company's announcement. In Arnoldization, feed is subjected to live steam at 100° C. for five minutes.

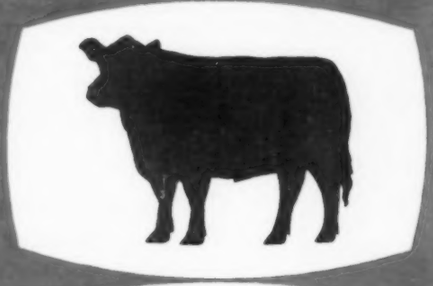
Golf Pro to Speak To Kansas City Club

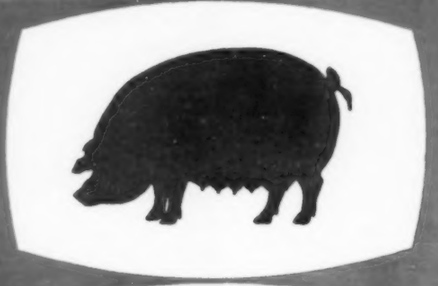
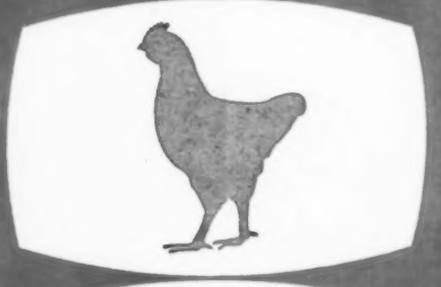
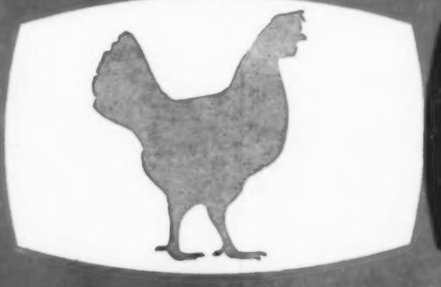
KANSAS CITY—Pointers aimed at improving the observer's golf game will be the feature of the March 19 meeting of the Kansas City Feed Club. Buss Peelle, well-known Kansas City professional golfer who operates a golf school and driving range at 9th and Main, will provide the pointers. He will set up his range in the Phillips Hotel and demonstrate for those present techniques that will assure lower scores at the golf outing of the club scheduled for May.

The evening will start at 6 p.m. with cocktails, followed by dinner at 7 and the program.

Robert D. Anderson, International Milling Co., club vice president and chairman of the program committee, also announced that the Spring Dinner Dance will be held April 17 at the Blue Hills Country Club.

In DAWE'S Vitamelk Programs



dependability makes the difference

Program your feed business the Vitamelk way. Dawe's Vitamelk program represents far more than fortification products. It is a way of doing business on the basis of having a nutritional laboratory affiliation. Dawe's dependable professional services will provide you sound counsel and relieve you of many of the details of managing a successful feed business. You will have added assurance that you are supplying your customers top-quality feeds.

This Is the Vitamelk Program

1. **VITAMELK**—a comprehensive vitamin, trace mineral, antibiotic and unidentified factors fortifier. *Full* fortification in one package.
2. **COMPLETE FORMULATIONS** for farm-tested feeds.
3. **TAG INFORMATION** for today's complicated feed tag requirements.
4. **COMPLETE FEEDER INSTRUCTIONS** on how to use Vitamelk-fortified feeds to best take advantage of their great built-in power.
5. **DAWE'S QUALITY CONTROL** laboratories are a remarkable help in solving special problems.
6. **MERCHANDISING** and sales counsel.
7. **CONTINUING RESPONSIBILITY** for applying the latest nutritional knowledge to *your* feeds.

Dawe's specialized nutrition, manufacturing and merchandising know-how is yours—yet you pay for Vitamelk only—when you program your business the Vitamelk way. Write for specific information on complete programs for poultry, swine, beef and dairy cattle.

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World's Oldest and Largest Specialists in Vitamin Products for Feeds

DAWE'S LABORATORIES, INC.—4800 South Richmond Street, Chicago 32, Illinois

Delaware Poultrymen Hear Disease Panel

NEWARK, DEL.—Poultry maintenance and disease control and hay pelleting were among the subjects discussed at the annual Delaware Farm & Home Week held here recently.

Included in the poultry health discussions was an address by Dr. Stephen B. Hitchner, research veterinarian with the American Scientific Laboratories, Madison, Wis., who described a new method of vaccination against infectious laryngotracheitis which he said offers many advantages over the traditional brush application of vaccine to the vent.

He said tests indicate that the vaccine may be applied effectively by the drop method, already used in the application of certain other types of vaccine.

Dr. Hitchner listed the following as advantages offered by the new method: (1) Uniformity of dosage from bird to bird; (2) Uniformity of method of application by different vaccinators; (3) Ease, rapidity and cleanliness of the vaccination procedure. He also pointed out that birds may be vaccinated at an earlier age by the drop method.

Another poultry disease discussed was leukosis. Dr. William J. Benton, poultry pathologist with the University of Delaware, reported on research efforts aimed at controlling the disease. At present, he said, there is no vaccination and no treatment. He advised growers not to waste money on drugs.

Careful selection of stock, growing young birds separate from older ones, and strict sanitation and management procedures are the only recommendations that can be given at present for reducing the incidence of the disease, he said.

Hay pelleting was discussed by a panel on hay handling. One panel member, Daniel D. Denham, Cortland, Ohio, dairyman, said weather no longer is the key to haying that it once was.

"If the ground can hold up our dual wheel tractor, we can harvest hay," he said. He pointed out that he cut, chopped, dried and stored 500 tons of alfalfa hay from 200 acres last year.

"People from Maine to Texas have come to see our operation," he said. "They all have the same problem—rain. Our chop-dry-pellet-store system beats the weather."

Roger Kelso | Lloyd Harmsen | Madison Tomfeld

KENT PROMOTIONS—William Schafenacker, Kent Feeds sales manager, has announced the promotion of two former assistant territory representatives to the position of territory representatives and the appointments of other men to assignments with the Muscatine, Iowa, firm. Roger Kelso, former assistant territory representative in a northeast Iowa area, has been named to head a Kent territory in west central Iowa. Lloyd Harmsen, former assistant territory representative in an east central Iowa territory, has been promoted to territory representative for a central Iowa territory. Bob Byrne, former territory representative in that area, has been promoted to turkey sales supervisor in north central Iowa. Madison Tomfeld, who was formerly with an Iowa feed firm, has been named to replace Mr. Harmsen. Fred Miller, who has finished a four-month Kent sales training course, will replace Mr. Kelso.

WANTED!
MORE FEED, QUICK

THANKS TO

THE ORIGINAL LIVE RUMEN MICRO-ORGANISM COMPLEX

Welcome Change! When calves recently put "on feed" start chewing and digesting bulk almost immediately, when "off feed" troubles are avoided in older animals switched from pasture. That's the proven story when you feed RUMEX (R) the original rumen inoculum, composed of the many forms of bacteria (not a culture of just a few) found in healthy, properly functioning animals.

Don't Run in the Dark! There's no need to wonder when cattle will start eating their way to growth, production and reproduction . . . or to wait many weeks before you can see progress toward market condition. To speed up ruminant digestive action by maintaining cellulolytic activity, synthesis of B vitamins and helping to convert Non-protein Nitrogen (Urea) to protein.

USE RUMEX

Reduce "Switchover Sitdown"—cattle resume feeding sooner
Shorten "Weaning Wait"—Calves chew and digest hay and grass at age of 10 days
Reduce "Drug Dry-Up"—Avoid "off-feed" conditions in cattle being treated with antibiotics and drugs
Improve Profits—because of greater gain, increased efficiency, better "grading out", higher market prices

WRITE FOR FREE LITERATURE—showing results of research and the complete Rumen story

Rumex (R) is a product of Vitamins, Inc., Chicago, Ill.

Sold and Serviced By

THE AMBURGO COMPANY, INC.

In the East—1315-17 Walnut St., Philadelphia 7, Pa.
In the West—3862 E. Sussex Way, Fresno, Cal.
Midwest—Carroll Swanson Sales Co.
2215 Forest Ave., Fresno, Cal.

Report Published on Bulk Solids Flow

SALT LAKE CITY, UTAH—A report on findings of the bulk solids flow project at the Utah Engineering Experiment Station has been published and put on sale in limited numbers.

The purpose of the project is to develop a quantitative method of design for flow of bulk solids in storage systems.

It is stated in the preface of the report that the requisites for a quantitative method of design for flow of bulk solids are: (1) A measure of the flowability of bulk solids and (2) a relation between flowability and the design criteria of storage plant.

"In this report we describe the measure of flowability of bulk solids, the testing apparatus and procedure used in measurements, and we discuss the results obtained for a few bulk solids," the authors—A. W. Jenike, P. J. Elsey and R. H. Woolley—explain in the report preface. "We have attempted to present the material in a form applicable not only to the design of storage plant, but also to the development of a mathematical theory of continuous flow of rigid-plastic Coulomb solids."

A limited number of copies of the progress report may be obtained at $1.50 each by writing to the Director, Bulk Solids Flow Project, 207 Mines Building, University of Utah, Salt Lake City 12, Utah.

The bulk solids flow project is being sponsored by the Utah Engineering Experiment Station; American Institute of Mining; Metallurgical & Petroleum Engineers, Inc.; Engineering Foundation, United Engineering Trustees, Inc., and American Iron and Steel Institute.

NEW ON TOLEDO BOARD

TOLEDO—The Toledo Board of Trade recently elected to membership Thomas H. Anderson of The Andersons, Maumee, Ohio, and Robert L. Schuster of the L. J. Schuster Co., Toledo.

Cottonseed Group To Hear Banker

SAN FRANCISCO—"Agriculture in a Prosperous Economy" will be the subject of an address May 11 by Earl Coke, vice president of the Bank of America, before the annual convention of the National Cottonseed Products Assn. The convention will be held May 10-12 at the Mark Hopkins and Fairmont Hotels here.

Mr. Coke has a long career of service in agriculture. He joined the Bank of America in 1955 after serving two years as assistant U.S. secretary of agriculture.

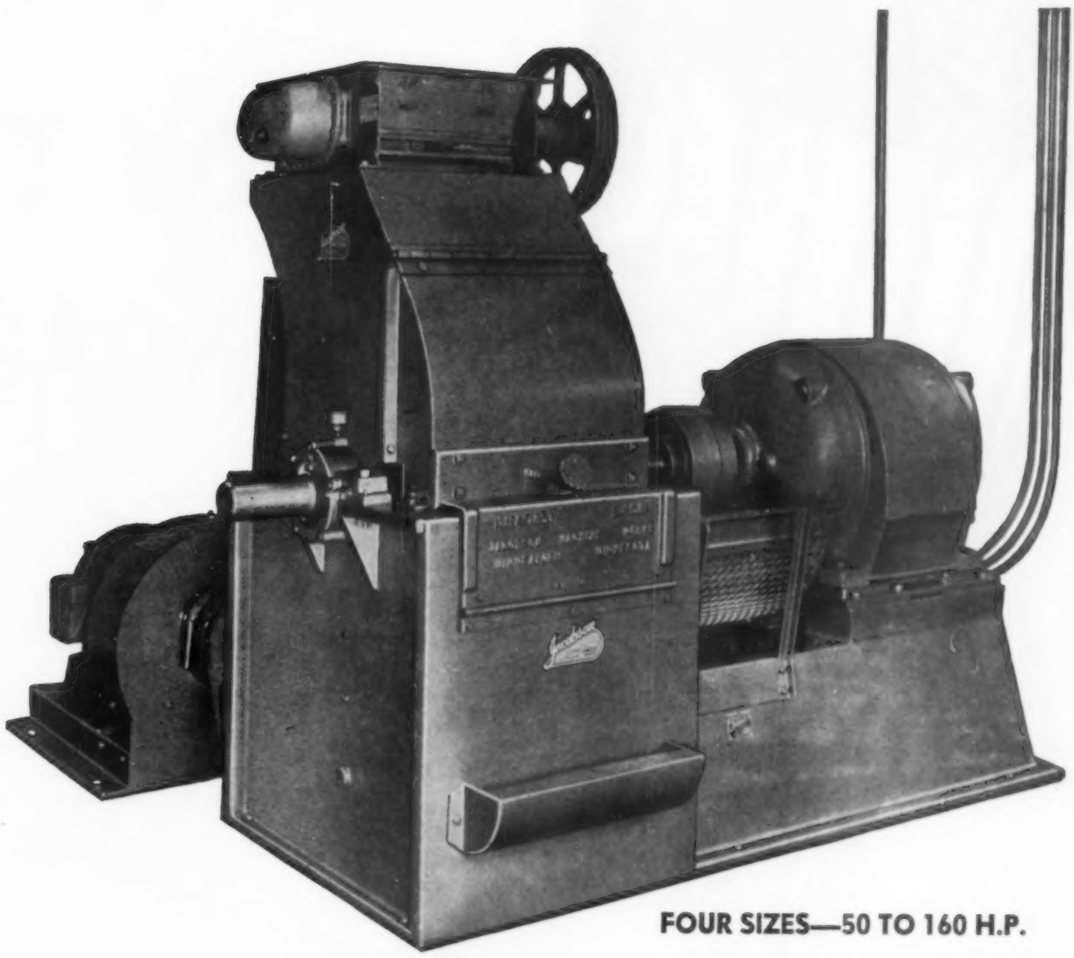
GIVE HIM ADVICE HE'LL APPRECIATE

Remind him to order Morton T-M Salt. See page 45.

Jacobson QUALITY

AJACSOMATIC

REMOTE SCREEN CHANGE HAMMERMILL



FOUR SIZES—50 TO 160 H.P.

Pulverizing for Pellets
Fine Grinding for Poultry Feeds
Medium Grinding for Hog Feeds
Coarse Grinding for Cattle Feeds

Jacobson Hammermills
Produce
Uniform Grinding

Write for Bulletins and the Name
of Your Jacobson Sales Representative

JACOBSON MACHINE WORKS, Inc.

49 Years of Continuous Service to the Feed Industry

1090 TENTH AVE. S. E. DEPT. M MINNEAPOLIS 14, MINNESOTA

If the antibiotic you're now

using is suffering from old age...

GET YOUR LAYER FEEDS BACK IN ACTION WITH BACIFERM®!

TIME TO RETIRE YOUR OLD ANTIBIOTIC? You've probably asked yourself this question now that new facts about the bacteriostatic (bacteria-slowing) "broad-spectrum" antibiotics are beginning to unfold. These aging tetracyclines have apparently built up resistant strains of bacteria, and find it difficult to do the job they once did.[1] These new findings indicate you may not be getting full value from the money you spend on such antibiotics.[2,3] There is increasing realization among nutritionists of the value of the bactericidal (bacteria-killing) antibiotic Baciferm.

WHAT A DIFFERENCE BACIFERM MAKES IN FEEDS! Flocks have new "get up and go." Appetites bound back. Egg baskets fill up faster. Laying periods stretch out. Hatchability increases and mortality falls off. Baciferm contains the exclusive* antibiotic zinc bacitracin. Baciferm never lets down its guard. Baciferm's *selective* action kills dangerous bacteria fast, lets beneficial bacteria go right on producing vitamins and other valuable growth factors. With Baciferm, there is no upset of normal bacterial balance. In stress periods, Baciferm controls deadly secondary invaders. Baciferm never lets your feed down.

BE SURE WITH BACIFERM! Put doubts about antibiotics to rest with Baciferm. At high levels or low levels Baciferm *always gives full protection.* Baciferm packs into feeds plenty of extra B-vitamins, high protein, vitamin K and unidentified growth factors. Zinc bacitracin has the antibiotic stability manufacturers require. Cost? Baciferm can be added to each ton of your layer feed at $2 to $4 less than the tetracyclines.

1. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.
2. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, In press.
3. Bird, H. R.: Coming Events in Poultry Nutrition. Hatchery & Feed, July, 1958.

**Made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957.*

the buy is BACIFERM®!

(ZINC BACITRACIN ANTIBIOTIC SUPPLEMENTS)

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CSC

Feed Again Ranks First Among Farm Supplies as Co-op Business Goes Up

WASHINGTON — Feed again ranked first among farm supplies purchased for patrons by farmers' cooperatives in 1956-57 and contributed to an over-all increase in cooperative business of 6.4% on a dollar basis over the previous year, according to a recent report from Farmer Cooperative Service, U.S. Department of Agriculture.

A total of 4,499 cooperatives handled feed during 1956-57, accounting for more than $1 billion in gross business and net business of $804 million. Petroleum products ranked second among farm supplies with a net of $530 million, and fertilizer was third with nearly $275 million.

All farm supplies showed increases, with feed, fertilizer and petroleum products showing substantial gains.

Also contributing to the increase in total cooperative volume were gains in the net value of marketing of dairy products, grain, poultry, rice, sugar products and tobacco. Livestock and wool showed decreases, however.

Dairy products continued to lead in value of farm products marketed with a net value of almost $2.8 billion compared with $2.5 billion the previous year. They accounted for nearly 35% of the total net value of farm products marketed by these farmer businesses.

Grains, including soybeans and soybean products, retained second place with a net volume of $1.7 billion as compared with $1.6 billion the previous year, accounting for almost 21% of farm products marketed. Livestock and livestock products stayed in third place and fruits and vegetables remained in fourth place in dollar volume of business.

Cooperatives did a net business of $10.4 billion in 1956-57 compared with $9.7 billion the year before, an increase of 6.4%. The 1956-57 figure includes $8 billion for farm products marketed, more than $2.1 billion for farm supplies and nearly $235 million for services performed for patrons. Percentagewise, this represented an increase of almost 7% for farm products, which is higher than the increase of about 2% in cash receipts to farmers for the period. Farm supplies increased 5% and service receipts went up 9%.

While farmers did 6.4% more business through their cooperatives in 1956-57, at the same time the total number of cooperatives remained substantially the same and memberships dropped from 7,730,710 to 7,671,730. This latest survey showed 9,872 marketing, purchasing and related service cooperatives in 1956-57 compared with 9,876 the previous year. Many cooperatives discontinued operating during 1956-57 because of liquidation, consolidation or merger, but at the same time many new associations were formed.

SUPPLIES PURCHASED FOR PATRONS

Item—	No. of co-ops handling	Gross business	Net business after adjusting for duplication*
Building materials	1,501	$ 117,161,000	$ 81,807,000
Containers	1,044	55,270,000	26,722,000
Farm machinery and equipment	1,843	101,683,000	71,083,000
Feed	4,499	1,078,132,000	804,286,000
Fertilizer	4,143	433,873,000	274,615,000
Meats and groceries	971	57,022,000	48,782,000
Petroleum products	2,794	845,858,000	529,679,000
Seed	3,791	137,108,000	99,979,000
Sprays and dust (farm chemicals)	2,334	57,190,000	40,707,000
Other supplies	4,529	261,181,000	166,367,000
Total farm supplies	†7,406	$3,144,478,000	$2,144,027,000

*Does not include business between cooperatives.
†Adjusted for duplication arising from multiple activities performed by many cooperatives.

Peak May Be Passed

The USDA said the number of memberships may have passed their peak inasmuch as there was a decline for the first time in 1956-57, and commented that this decrease in number of memberships is to be expected because of the decrease in number of farms.

Farm supply cooperatives represented 34% of the total number and accounted for nearly 46% of the total memberships.

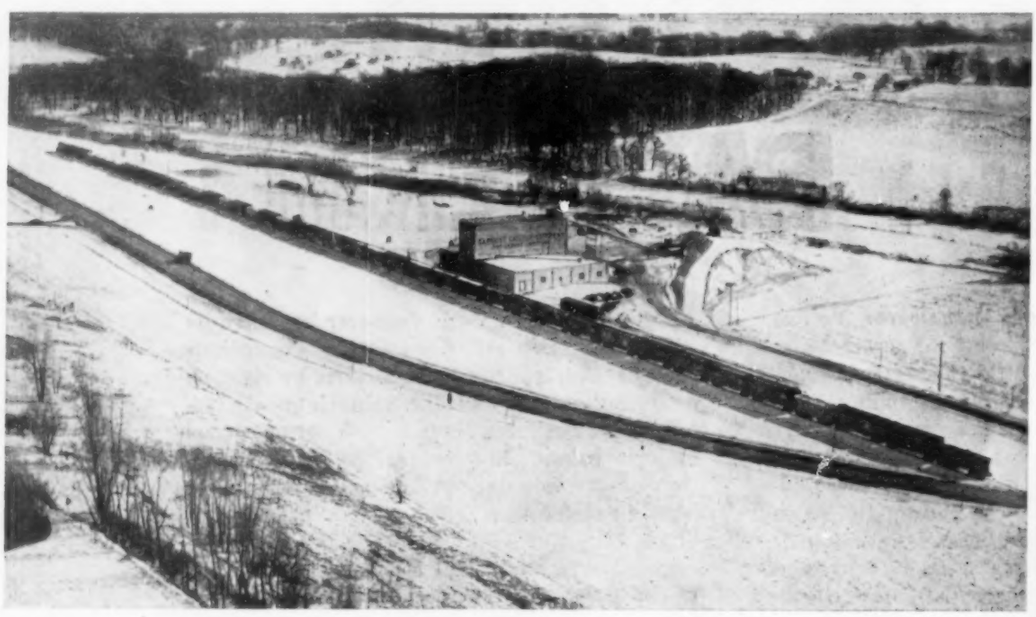
The survey showed 63% of all marketing cooperatives handled at least some production supplies and 59% furnished specialized or general services for their patrons, while 22% of the farm supply cooperatives marketed farm products and 42% performed various services for their patrons.

About 93% of all cooperatives included in this survey were local associations and these accounted for more than three fifths of the total memberships. The others were regional cooperatives.

First three states by estimated number of cooperatives, memberships, and business were: Number of cooperatives, Minnesota, Wisconsin and Iowa; number of memberships, Minnesota, Illinois and Missouri, and business, California, Minnesota and Illinois.

FEED STORE SOLD

WASCO, CAL.—Peter J. Ornelaz has announced the sale of his business, the Wasco Feed & Supply, to Carl Roderick and Wilma Young, Arvin, Cal. Mr. Roderick plans to manage the business and will make his home in Wasco.



Trainload of Sargent Calcium to supplement over 56,000 tons of feed

40-CAR SHIPMENT MARKS OUR SECOND ANNIVERSARY

The Sargent Calcium Co. celebrated its Second Anniversary on February 26, by shipping a TRAINLOAD of Calcium to Feed Manufacturers and mixers in Iowa, Minnesota, and Nebraska.

The 40 car TRAINLOAD of Calcium is from the rich Alden Ledge, and is the most pure limestone deposit in the state of Iowa.

OVER 99% pure Calcium Carbonate.

SARGENTS have been able to develop their name through their quality product and PROMPT SERVICE. Call us COLLECT so that you too may receive the benefits of the SARGENT BRAND.

REMEMBER THIS SIGN WHEN ORDERING CALCIUM

get all the facts on our 3 grades

★ FINE
★ SUR-FLO
★ E-Z MIX

SARGENT CALCIUM CARBONATE

Sargent Calcium Co.
DES MOINES, IOWA

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TRY THE COLUMBUS heavy duty industrial ROLLER MILL AT OUR EXPENSE!

Endorsed by grain dealers, the Columbus heavy duty Roller Mill will roll all grains. Superior design, sturdy construction for years of profitable service.
Four sizes—300 bushels, 600 bushels, 900 bushels, 1200 bushels per hour, with or without electric motor.

THREE MODELS:
Trailer, stationary or truck mounted

Operate the mill 10 days. If not satisfied, return it. WE WILL REFUND YOUR MONEY AND PAY RETURN FREIGHT.
WRITE FOR PRICES

HENKE MANUFACTURING CO.
Columbus, Nebraska

enzymes
figure in your future...

Here's how TAKAMINE LABORATORY can put over 60 years of know-how and 35 years of feed enzyme experience to work for you NOW!

Today's stepped up interest in feed enzymes calls for a more intensive program of enzyme testing and evaluation in your feed formulas. TAKAMINE* LABORATORY, the oldest basic producer of purified enzymes of microbiological origin in the country, can help you.

TAKAMINE enzymes have been used experimentally in animal and poultry feeds since 1924. In 1957, a major breakthrough was made (10,000,000 broilers or the equivalent of 1,000,000 turkeys, for instance, already have documented TAKAMINE enzyme results with western barley grain).

TAKAMINE LABORATORY is a leading supplier of these **natural** catalysts to the feed, food, pharmaceutical and industrial fields, where rigorous quality control, uniformity of product, stability and reproducibility of results are required.

Take advantage of the continuing intensive and extensive TAKAMINE research program by authoritative and experienced specialists in this complex industry. **Because of the highly specialized nature of enzyme work, we believe this is significant to you.**

If you are interested in feed enzyme materials for evaluation —or if our Technical Service Department can be helpful—call, wire or write us for details.

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*(Pronounce it Tack-a-ME-nee)

Takamine Laboratory

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Phone PRescott 9-4776 or TWX-78-PAS

New HILLTOP FEROLDEX INJECTABLE IRON FOR BABY PIGS

With cobalt, copper, zinc and manganese

Your customers will have the finest pigs they've ever raised when you recommend and sell them Hilltop Laboratories' New FEROLDEX . . . the injectable iron with other Mineral Essentials. Prevents and controls Pig Anemia due to iron deficiency . . . builds disease resistance . . . promotes fast growth and weight gains. Gets your customers' pigs ready for market weeks earlier.

★ CORRECTS ANEMIA...
★ PROMOTES GROWTH
• FEWER RUNTS! • TO MARKET SOONER!
• COSTS PENNIES!
• UPS PROFITS!

WRITE TODAY FOR CATALOG & PRICES

Remember . . . when you recommend new FEROLDEX, you're recommending the best! It's better because it contains these Extra Mineral Elements besides Iron.

HILLTOP LABORATORIES

HILLTOP LABORATORIES, INC., 718 WASHINGTON AVENUE NO., MINNEAPOLIS 1, MINNESOTA

Feeding of Livestock Covered in New Books

DANVILLE, ILL.—"Approved Practices in Feeds and Feeding" and "The Stockman's Handbook" are two new books published recently by the Interstate Printers & Publishers, Inc., Danville.

"The Stockman's Handbook," by Dr. M. E. Ensminger, chairman, department of animal science, State College of Washington, is an extensive revision of the first edition published in 1955. It is priced at $8.50.

The author notes in his preface that, although the first edition has been out only three years, during this period "amazing scientific discoveries and technological advances have been made; the livestock industry has changed in a changing world . . . In order to reflect these changes, this revised edition was prepared."

The 668-page book, with 625 charts, tables and illustrations, contains 19 sections: Breeding livestock, feeding livestock, pastures, hay, silage, management, buildings and equipment, animal health, selecting and judging livestock, fitting and showing livestock, marketing livestock, meat, classes and grades of wool and mohair, law on the livestock farm, breed registry associations, breed magazines, where to go for help, stockman's book shelf and weights and measures.

Said D. Howard Doane, Doane's Agricultural Service, of the book: "No other writer has ever compressed so much available livestock information in the covers of a single book . . . It will be a lifetime reference for successful stockmen."

Dr. Daniel W. Cassard, chairman, animal husbandry department, University of Nevada, is the author of "Approved Practices in Feeds and Feeding," which has 300 pages and 89 illustrations, and has a list price of $3.

The handbook provides a ready reference on "how-to-do-it" information. Its chapters cover such things as: Opportunities in livestock feeding; use of feed by animals; types of feeds; balanced rations; mixing and preparation of feeds; feeds for beef cattle, sheep, dairy cattle, hogs and horses; comparative values of feeds; feeding equipment and work simplification, and troubles from improper feeding. The author also provides detailed feed composition tables and separate daily requirement tables for beef cattle, dairy cattle, sheep, swine and horses.

The handbook is a revision of an earlier standard manual of the same title.

Georgia Turkey Men Elect W. J. Frankum

ATHENS, GA.—W. J. Frankum, Martin, Ga., was named president of the Georgia Turkey Federation at the recent annual meeting and short course held in Athens. He succeeds James Thaxton, Watkinsville.

Lewis McCray, Molena, was elected vice president, and Henry Massey, extension poultryman, Athens, was reelected executive secretary.

Pellet Plant Installed

JAMESTOWN, N.D.—The Peterson-Biddick Co., Jamestown, has installed a new pelleting plant, including a California Pellet Mill, automatic weighing and bagging scale and equipment for grinding and mixing feed for pelleting.

The firm also has a new bulk delivery truck with three compartments. The unloading gates and unloading auger are hydraulically controlled.

IS YOUR MILL A PROFIT BOTTLENECK?

PRATER RESEARCH AND DEVELOPMENT ELIMINATING THE PROFIT "BOTTLENECK" FROM FEED MILL OPERATIONS.

The time it takes you to move that business "in and out" of the mill determines profit or loss. You must have the best and most modern RECEIVING, GRINDING AND MIXING facilities to step up mill input and increase mill output. Otherwise, you'll soon find there's less business willing *to wait* on the receiving end while you struggle with inadequate mill facilities.

Mill feed loads are getting larger—the trend toward VOLUME handling is here NOW—but you cannot handle VOLUME without high production equipment. Have a PRATER engineer survey your mill and recommend the best modernization plan for YOUR plant. There will be no obligation—you can depend on PRATER'S dependable and established reputation in the feed mill industry that all recommendations will be SOUND and based on your area requirements.

PRATER PULVERIZER COMPANY
1537 South 55th Court Chicago 50, Ill.

YOU CAN INCREASE PROFIT FROM HANDLING TODAY'S HIGHER VOLUME, HEAVIER LOADS!
PRATER High Production Equipment Will Keep Business Moving IN and OUT of the Mill—ON TIME—Easier, Faster

DE-WING POULTRY FAST, SAFELY with *Dakota Ranches*
"DE-WINGER"

When you have calls for de-winged poultry, here's the fast, easy, efficient and safe way to de-wing: Just draw the wing joint across the electrically heated wire and it's severed and cauterized in one swift motion. Recommended for de-winging all ranged chickens and game birds. Readily adaptable for "notching" ranged turkeys. Send your order now.

DAKOTA RANCHES MFG. DIV.
FAIRMOUNT, NORTH DAKOTA

Honeggers' proudly announce...

WE DOUBLED OUR BUSINESS LAST MONTH

February sales up

133%

over February, 1958

Honeggers' can help you...

DOUBLE YOUR TONNAGE

To PROGRESSIVE FEED DEALERS

TALK IS CHEAP; it's results that count. Many feed dealers across the land have DOUBLED THEIR TONNAGE and TRIPLED THEIR PROFITS on the HONEGGER program. Of course, there is a reason, - - but we know the reason and what others have done, YOU can also do. We promise you this.

Are you being crowded by piddling crossroad dealers? Are you being by-passed on larger feeders? Do you need more territory protection and a more complete line of products that you can merchandise on an exclusive basis? Do you need a more aggressive advertising and merchandising program?

Then why don't you do as hundreds of other good dealers have done and line up today with the most progressive feed company in America.

We're BIG enough to do anything that we need to do, yet SMALL enough to give you and your problems individual and PERSONAL attention.

Write or call us today. Get the facts. We'll show you how to make more money on a PROTECTED and EXCLUSIVE franchise basis.

Ed Hickey
President

No other feed company in America has so much to offer! →

EXCLUSIVE TERRITORY protection gives the Honegger Dealer plenty of room to grow. A piddling dealer at every little crossroads is not Honeggers' idea of effective distribution.

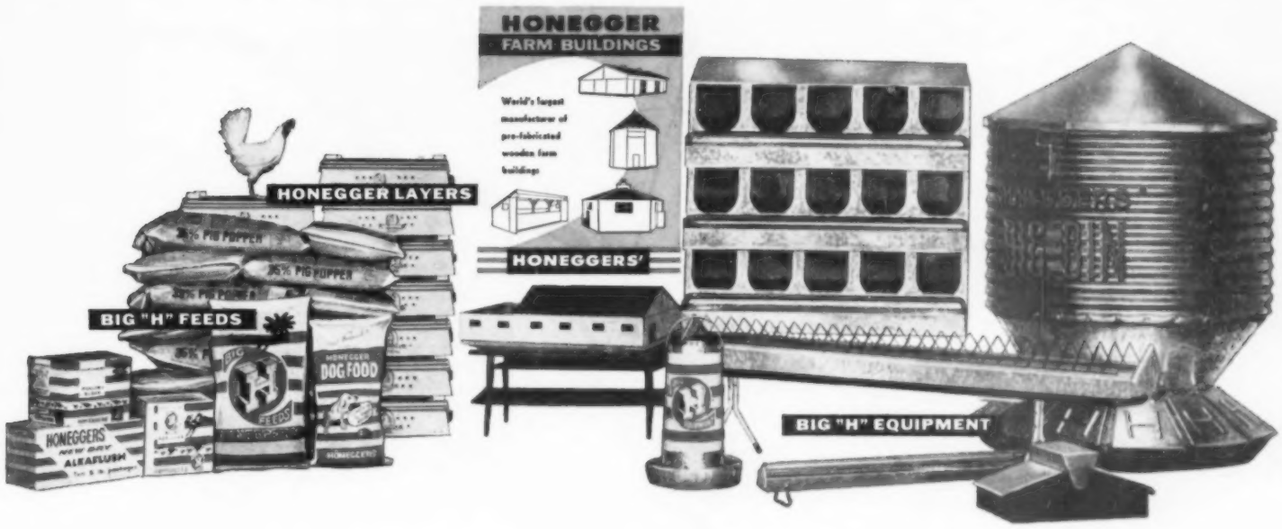
DEALER TRAINING schools at Fairbury-Forrest and monthly district meetings help Honegger dealers and their sales personnel make sales through service. Their know-how and self-confidence makes selling easy, more effective.

SALES ASSISTANCE from well trained, enthusiastic district managers produces new business and keeps Honegger dealers inspired. Product specialists, such as building and equipment salesmen, help dealers close big sales.

LOCAL PROMOTIONS and "Planned Selling" that move 75-150 tons of feed out of the dealer's stores are not uncommon for Honegger dealers—with bulk of business on cash basis, too. Honeggers help plan and man open houses, hay-makers and ice breakers.

TRIPLE YOUR PROFITS

What others have done....you can do also WITH HONEGGERS' COMPLETE PROGRAM

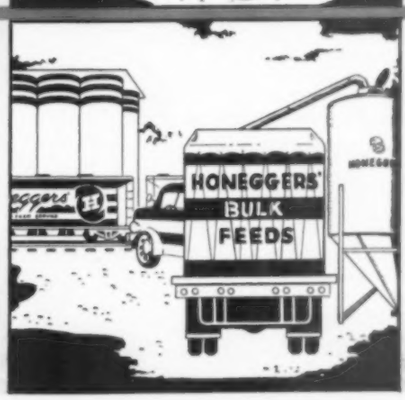


➔ Write, phone or wire collect for complete details . . . *DAY or NIGHT* . . . Do it today!

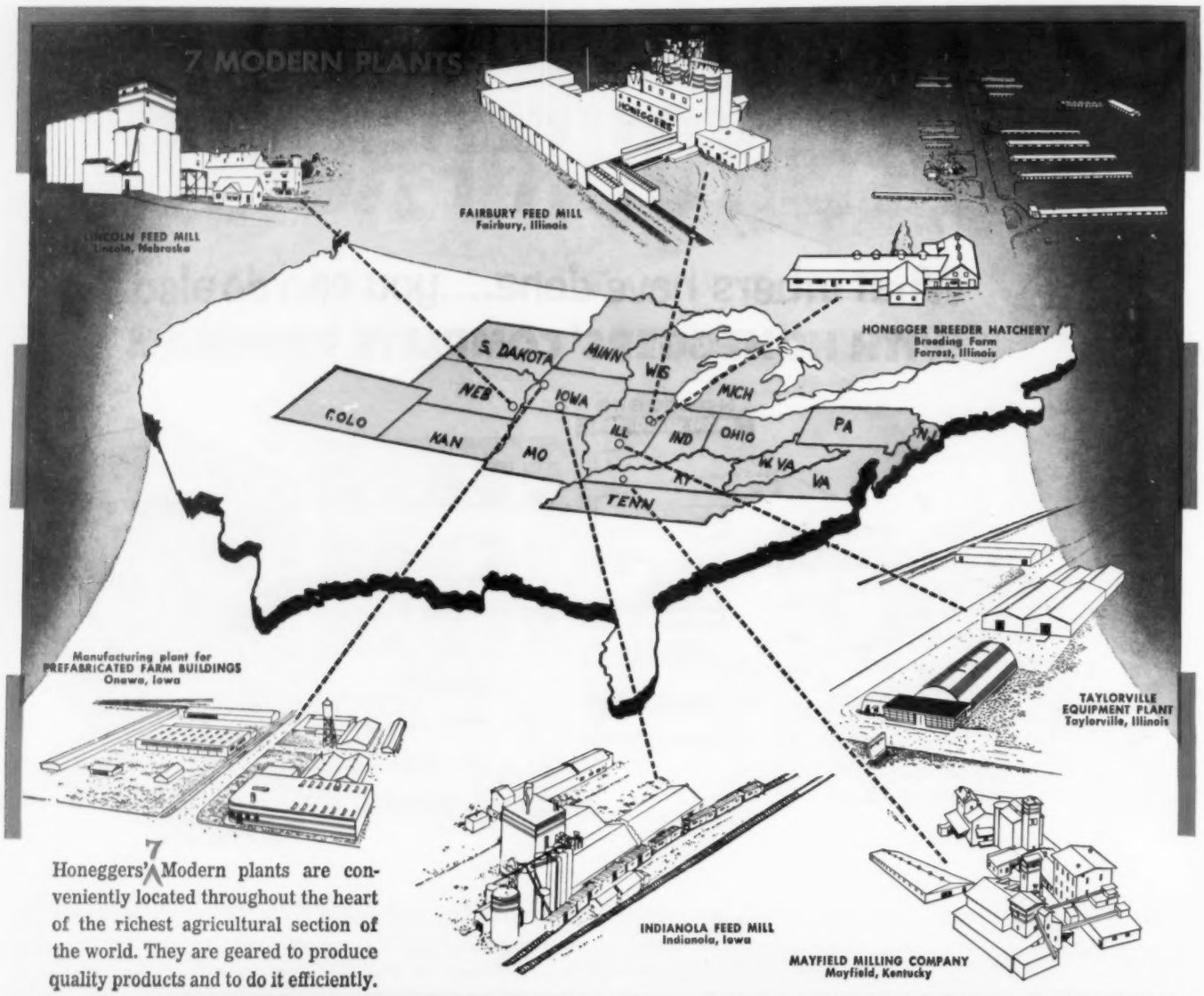
SINGLE SOURCE OF SUPPLY gives Honegger dealers over 190 products sold by no one else in his territory. Combination shipments reduce freight costs, cuts dealer's equipment inventory because you are only a few days away from Honeggers' warehouse.

HONEGGER RESEARCH FARM has attracted over 40,000 visitors in past ten years. Practical research and convincing demonstrations here keep dealers and customers sold on Honegger know-how, and produce more dealer profits!

PATRONAGE DIVIDEND gifts make real boosters of farm wives and kids. Coupon-saving customers get valuable premiums direct from Honeggers without bother or expense on dealer's part. Result: terrific customer loyalty . . . REPEAT PROFITS!



BULK FEED SERVICE at Honeggers' employs king-sized fleet of hopper cars and modern bulk trucks. Honeggers' bulk farm bins are profit-makers that help dealers sew up business.



Honeggers' 7 Modern plants are conveniently located throughout the heart of the richest agricultural section of the world. They are geared to produce quality products and to do it efficiently.

CONSISTENT, HEAVY IMPACT advertising sells for you in your customer's farm press.

Here is another plus factor for Honegger Dealers. Full page and double page ads run in color in leading farm publications. These ads keep customers constantly aware of the ever increasing services and products available at their nearby Honegger Dealers.

What Honeggers' Complete Program can do for your customers it can also do for you. When you add up all the plus factors of the Honegger Complete Program, the road leads to greater sales and greater profits for farmers and for dealers.

No other company in America has so much to offer!

'Farm Revolution' Gets Attention at Des Moines Event

DES MOINES — Agricultural surpluses, farm industrialization, the trend toward larger farms and other aspects of the "farm revolution" caught the major share of attention at the National Farm Institute in Des Moines.

William Yaw, Lafayette, Ind., representing the U.S. Farm Clinic, said persons associated with agriculture should take the lead in the farm revolution and avoid copying industry's methods and mistakes.

George Scarseth, director of research, American Farm Research Assn., West Lafayette, Ind., declared, "The race toward larger and larger farms is not to be won by the corporate farms, for the farm family unit has to be the unit of the farm enterprise. . . The point where labor has to be supervised by hired help may be the breaking point on the size of the farm."

Senator Speaks

Bourke B. Hickenlooper, U.S. senator from Iowa, called for an end to "fiscal irresponsibility." He said "outmoded" control programs have allowed rivals at home and abroad to expand and move in on "our farmers' traditional markets."

"The idea that you get anything free from Washington is as phony as the Cardiff Giant. Any government big enough to provide all your wants is big enough to take all you've got."

Harold Cooley of North Carolina, House agricultural chairman, called for agreement among farm groups on the solutions of farm problems. He suggested farmers could: Rebuild old programs to get more efficient production control, perhaps get production payments from the federal treasury, combine adjustment price supports and subsidy payments and develop plans to control the flow of produce to markets.

Outlines Five Steps

Kenneth Hood, Chicago, director, American Farm Bureau Federation's commodity division, outlined five steps to build favorable foreign markets for the country's surpluses: (1) Set up a trade center in foreign countries to promote and expand markets, particularly in western Europe, (2) reduce trade barriers by continuing the Reciprocal Trade Agreements Act, (3) create bigger spending markets by buying more from foreign markets, (4) create a competitive price by developing domestic price support programs that will enable us to sell abroad without costly subsidy efforts, and (5) produce what foreign countries want to buy.

R. B. Tootell, Farm Credit Administration, Washington, D.C., said, "Sound, constructive credit can do more than any other single thing to keep the farmer a free agent."

New Hampshire Swine Growers May Organize

CONCORD, N.H.—After resisting previous efforts at organization, New Hampshire's swine growers are now reported to be in a mood for banding into a statewide association to see what they can do collectively in the way of promoting their industry.

Initial steps toward organization were taken at a recent meeting here, where 60 swine growers and persons from allied industries gathered as guests of the Beacon Milling Co. and the French Bros. Beef Co., Inc., Hooksett.

Roger Clement, Manchester, representing the Beacon Milling Co., expressed the belief that the big swine business in this area is destined to grow.

Dr. William Lashbrook, Cayuga, N.Y., representing the Beacon experimental farm, also predicted increased business and urged growers to go modern enough to raise pigs on an efficiency basis.

The organization movement was supported by many of the state's swine growers, as well as the state department of agriculture, the cooperative extension service and others.

OPENS KANSAS CITY OFFICE

KANSAS CITY—Duke Higbee and Lee Carlin have announced the opening of a Kansas City office for their feed ingredient jobbing and brokerage firm to better serve their customers in Missouri, Arkansas and Oklahoma. The Seneca, Kansas, office of the company will also be maintained as in the past. The new Kansas City office is located at 403 20 W. 9th St. Bldg.

Alabama Feed Sales Shows 11% Increase

MONTGOMERY, ALA. — An 11% increase in feed tonnage sold in Alabama during the month of January, 1959, over the same month a year earlier was reported here by the Alabama Department of Agriculture.

The report showed a total of 111,541.68 tons sold this year, compared to 99,662.09. Almost all of the increase was in poultry feeds, which were 68,455.26 tons in January of this year against 56,481.53 a year earlier.

Hog feeds showed a 27% increase. Tonnage was 5,835.68, compared with 4,578.13 in January, 1958. Dairy feeds were up about 16% to a January, 1959, total of 11,626.79 tons. Molasses tonnage was up 40%.

Oil meals, meanwhile, were down about 40%. Cereal by-products and horse and mule feed tonnages were down slightly. Other feeds were at about the same level.

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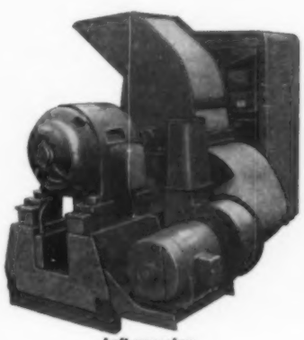
with instant electrical (or manually operated) remote control screen change

- **Four electrically operated, push-button control screen changes—without stopping the mill. (Screens can also be changed manually at the mill or from any desired above-floor location.)**
- **Separate motor-driven fan—all the power of the mill motor goes into grinding.**
- **Suspension grinding holds stock in contact with hammers by weight of the stock itself —giving a cooler, more uniform grind.**
- **Precision engineering and built-up bolted construction for smoother operation, easy access to all areas, simpler replacement of parts.**

TEXTURE GRIND

Horsepower for horsepower, screen for screen, Jay Bee mills are unexcelled for their consistently uniform texture of grind.



Left rear view

Right rear view, showing screen magazine

Sedberry now offers complete mill installation service—every step from plan to production. Mail this coupon today for complete information!

J. B. Sedberry, Inc., Dept. F., Franklin, Tenn.
Please tell me all about: ☐ the Jay Bee Model SM Hammermill.
☐ Your complete mill installation service.

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Bulk—Part 3

Installation of Bulk Requires Planning, Individual Initiative

Planning should include a study of the needs of the community, the feed man's own operation and his willingness to invest in bulk handling.

By Al P. Nelson
Feedstuffs Special Writer

Individual initiative and planning show up very sharply when a feed mill owner decides to go into bulk feed operations, including delivery. On a recent trip I made through the Midwest, near-South and the eastern sections of the country, I discovered that practically all of the mills I visited were interested in bulk operations. However, one fact stood out clearly. That is that each mill owner studied his own community and its feed operations, his own willingness to make investments in bulk and then proceeded accordingly.

Take the case of the Kewaunee (Wis.) Cooperative Store, for instance. This firm completely remodeled its mill and store during the past year at a cost of $67,000, and then purchased a bulk truck at an additional outlay. Located in a good dairy area where there are many conservative farmers, the firm is having to stage demonstrations and an educational program to get many farmers to take the bulk service. In fact, less than 10% of its feed is delivered in bulk about six months after remodeling.

However, officials said, because the firm remodeled and added bulk service, including bulk storage of ingredients, it has increased its dollar sales volume 17% in six months. The manager reports that feed gross margins have increased 4% by storing in bulk. If this rate of increase continues, and when bulk sales rise, the showing will be still more favorable, he says.

Triples Volume

The Arlington (Ill.) Grain Co. remodeled its mill and added bulk equipment during the past year. Before remodeling, the firm was selling 20 tons of concentrate monthly. Volume has now jumped to 60 tons per month. The firm has one bulk truck, and the mill manager and supply salesmen are out selling bulk service much of the time. They also have a finance plan to enable the farmer to buy metal storage tanks where needed. Proper storage space in this area needs to be solved for farmers so they can step into bulk service without too much immediate cash outlay. The grain firm gets its ingredients in bulk.

At North Lima, Ohio, the Crouse Feed Mill has two large bulk trucks operating. In addition to other accounts, this feed firm serves about 125,000 broilers in the area and may get contracts for another 100,000. Some broiler growers get daily bulk delivery of feed. Officials said it may be necessary to add another truck if broiler business increases. However, some large and older broiler growers in the area still get complete broiler feeds at the mill in bags and haul it themselves. A mill must be prepared to serve all types of customers.

The Fairfield County Farm Cooperative, which operates custom mills at Lancaster and Baltimore, Ohio—15 miles distant—has one bulk truck which serves customers in both areas. The firm added bulk delivery during the past year, and as bulk feed demand grows it may add another truck. Bulk equipment has given the firm a good increase in business over the previous year, officials said.

E. T. Van Buren & Sons, Inc., Hobart, N.Y., is located in an excellent dairy region. It pioneered in bulk feed delivery in its area back in 1947 and built volume steadily. Agricultural journals pictured the Van Buren bulk feed system in story and photos in 1947 and hailed it as beginning a new era for New York agriculture. This firm also sells lumber and other building materials and will aid the farmer in building wooden feed storage bins.

The firm is located in hilly country for the most part. Some dairy

EDITOR'S NOTE: This is the final article in a series of three written by Mr. Nelson on bulk feed handling operations. The series is based on information gathered by the author in interviews with feed men in recent extensive trips in the Midwest, Mid-South and East.

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IRRADIATED DRY YEAST
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Make sure
Your broilers come from
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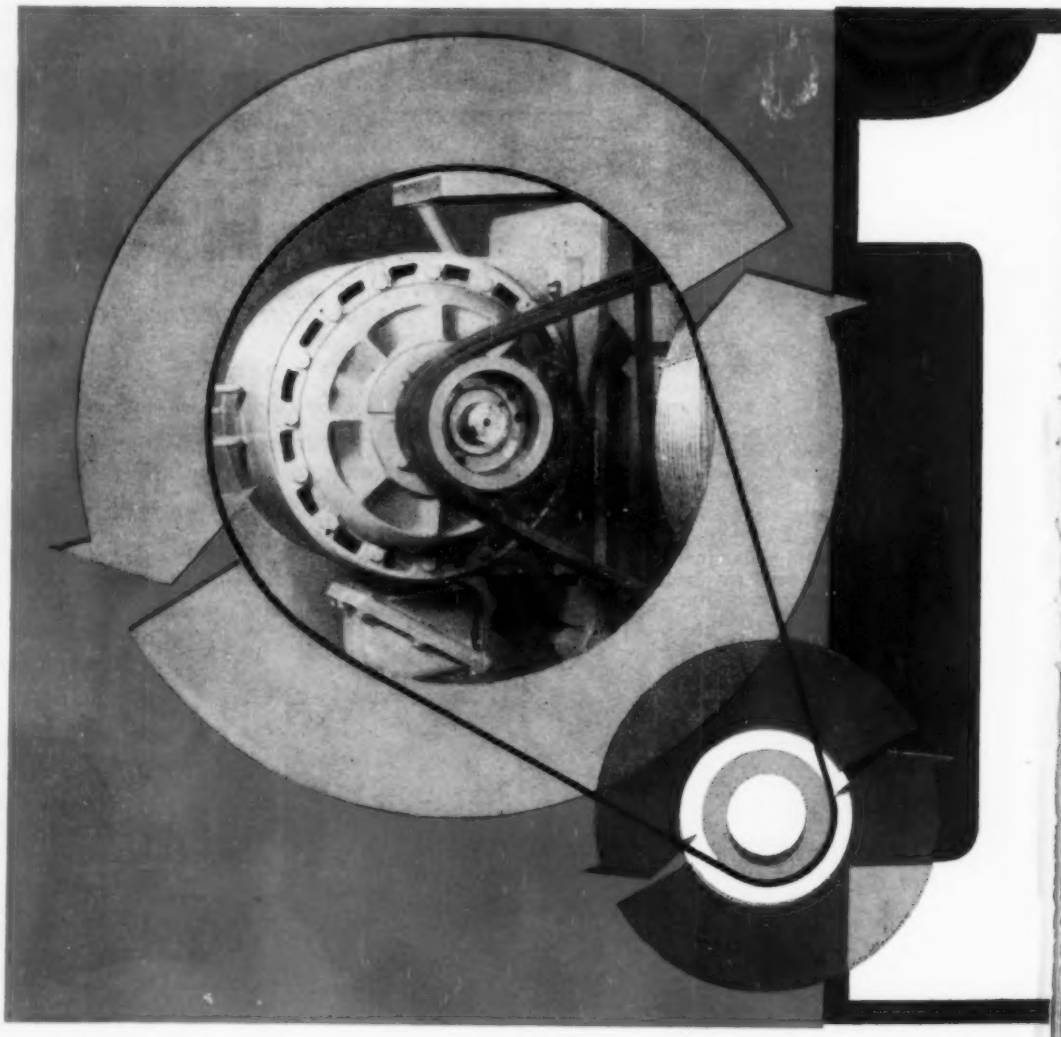
females!

SPROUT-WALDRON PELLET MILL SUPERIORITY



GMA
GRAIN PROCESSING MACHINERY MANUFACTURERS ASSOCIATION

JS/113 P

barns have milk cow quarters below barn drive-in space. This means that Van Buren company sometimes dumps bulk feed through a floor aperture which opens into a storage bin near the milk cow feeding area.

The I. L. Richer Co., Inc., New Berlin, N.Y., has a big mill at New Berlin and a number of branch grind and mix locations and stores in the nearby area. This firm has five bulk delivery trucks, some of which carry eight tons of poultry feeds or six tons of dairy. The company has both auger and air pressure type bulk trucks. Customers who buy in bulk get a $3 ton discount over bag price. About 35% of the firm's volume is in bulk feeds.

In addition to making its own brand of feeds, the Richer company also has a franchise for G.L.F. Feeds in this area.

Small Town Mill

Bristow (Ind.) Milling Co., near the Kentucky border, is an example of a small town mill which has modernized, including the adding of bulk delivery equipment. Farmers like the improvements and are taking to the bulk service. However, the owners report an educational campaign is still needed to swing more feed customers over to bulk delivery.

Garrand Mills, Lancaster, Ky., does a sizable business in feeds, and it also manufactures flour. While the feed mill has had some new equipment in the past few years, the management has not yet gone into bulk delivery. Many farmers do get bulk feeds dumped into their own trucks, however, at the mill. Then the farmer scoops out the feed when he gets home. The management at Garrand Mills is considering adding bulk equipment as demand for this service grows.

Strong & Strong, Earlville, Ill., which also has branches at Ottawa and Rollo, has two bulk trucks which it uses to haul bulk feeds from nearby supply centers direct to its feed customers. Bulk volume has grown so rapidly in this area that Strong & Strong is now planning to build a custom mill at its Earlville location to further facilitate bulk production and delivery. This is one instance where a large bulk feed delivery business was built without a custom mill in conjunction.

In Wayne, Neb., the Sherry Produce Co., which operates a mobile mill service, has a number of metal tanks in which it stores bulk feeds. These feeds are mixed by the mobile mill on days of the week when it is not scheduled for on-the-farm grinding and mixing. Then farmers wanting certain kinds of complete feeds can come in and practically serve themselves with feed stored in these metal tanks.

The J. H. Wake Feed Mill, Oskaloosa, Iowa, is another company which has bulk storage tanks placed at branch stores. The feed firm uses an 18-ton pneumatic-type bulk truck to take large loads of feed to specialized feeders and to fill the tanks at the branch stores. Each branch store has a six-ton bulk truck for delivery from tanks into the store area.

Many farmers also come to the branch stores to load up feed in bulk in their own trucks in order to get the pick-up discount. With this sort of branch store connection, the J. H. Wake Feed Mill is reaching far out for bulk feed busi-

Dr. Donald W. Cummins

TO DISTRICT POST—Dr. Salsbury's Laboratories, Charles City, Iowa, has appointed Dr. Donald W. Cummins, formerly field technical service advisor, as southeastern district sales manager for the poultry health firm. With headquarters at the company's branch office, Atlanta, Ga., Dr. Cummins is supervising the sales and service of 15 territory managers in Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Florida, and Alabama. A native of Canada, he received his D.V.M. degree from the University of Toronto in 1950. He was in charge of the state poultry laboratory, North Wilkesboro, N.C., before joining Salsbury's.

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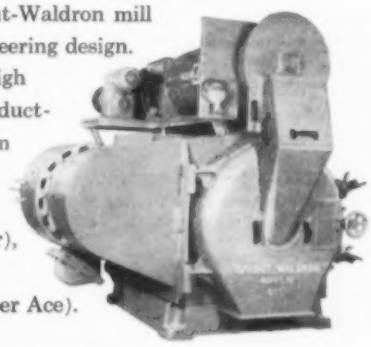
Sprout-Waldron pioneered in the development of the V-belt drive in order to increase the operating efficiency of pellet mills and reduce maintenance costs. V-belts do away with complicated gear trains and their oil-tight enclosures. They are quiet running, efficient and economical to maintain.

Sprout-Waldron leadership in pellet mill design has continued unbroken through the years. *Among the many firsts attributed to our creative pellet mill engineering are: the concept of driven dies, the scientific introduction of steam at high temperatures, the use of vertical ring dies, the swinghead die casing, the air handling of pellets from the mill, Ruftex tungsten carbide roll construction, stainless steel feeder conditioners, cooling columns with stainless steel interiors, and the design of auxiliary cooling, crumbling and grading equipment matched to the capacity of the pellet mill.*

In test after test, Sprout-Waldron pellet mills have out-produced in tons per horsepower every competitive mill on the market! Whether your needs be for the Junior, the Ace® or the Super Ace® you can rely on the Sprout-Waldron mill for the latest in engineering design. This means uniform high quality, maximum production rates and minimum operating costs. For details request Bulletin 165-A (Junior), Bulletin 100-A (Ace) and Bulletin 201 (Super Ace).



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Size Reduction • Size Classification • Mixing and Blending • Bulk Materials Handling • Pelleting

Exclusive Australasian Distributors: Jaybee Engineering, Pty., Limited, Dandenong, Victoria, Australia. Exclusive Canadian Distributors: Strong-Scott, Limited, Winnipeg.

GIVE HIM ADVICE HE'LL APPRECIATE

Remind him to order Morton T-M Salt. See page 45.

ness. Such an arrangement, plus pelleting, and similar services, puts the mill in an excellent competitive position, officials note.

At Princeton, Ill., the Community Feed Mill has three bulk trucks. The firm pioneered bulk feed delivery in the area. It makes its own line of feeds and also uses Pillsbury concentrate feeds. Community Feed Mill recently added four Butler 25-ton bins with a 60 ft. Universal leg for storing concentrates.

Bulk Since 1947

The Corn Belt Feed Co., Boswell, Ind., has had bulk delivery service since 1947, and finds that it has expanded business practically every year. It cost the firm about $20,000 to set up for the handling of bulk feeds, but the cost resulted in many large hog feeder accounts, the firm indicated. Some hog feeders have up to 22 large feeders, each of which holds more than one ton.

In the Iowa corn and hog country, Farmers Cooperative Grain Co., Randall, has two bulk trucks. The management reports that about 90% of the feed going through the plant is bulk. Only a few farmers call for their own feed, or get it in bags. A recent modernization program enabled this firm to put a bulk handling system into high gear and to reach many large hog accounts.

Quite a number of custom mills that have bulk feed handling equipment report that the larger farm operations which get the feed take advantage of the numerous discounts. These are generally the $2 to $5 a ton bulk discounts, plus the cash discount. Some mills consider cash as "pay when feed is delivered" and others consider it as payment 10 days after the first of the following month.

Better Customer

"We find that the farmer who takes bulk feed is usually a good business operator," said one mill owner, "and he pays his feed bills more promptly as a rule than the fellow who doesn't figure his costs so carefully. The big hog and cattle raiser who takes his cash discounts on feed, plus the per ton discount, is cutting his cost of doing business considerably. Prompt paying customers, too, lessen the custom mill operator's collection worries and help him to reduce expensive bank loans."

This writer found many, many medium-sized feed mills considering the idea of adding bulk handling equipment, including delivery. Most of them were already dumping bulk feed into customers' trucks.

In some parts of the areas visited, the trend was for grain elevators to put in modern custom mills with bulk handling equipment to try to cash in on the demand for bulk service. Formerly such elevators had relied on bag feed sales and had left the grinding and mixing to custom mills. Now many grain elevator operators look with envious eyes upon the bulk market, and probably more elevators will make an attempt to capture some of the market.

Record Volume Set By Washington Co-op

SEATTLE—A record business volume of $61,223,249 was transacted during 1958 by the Washington Cooperative Farmers Assn., Harry J. Beernink, general manager, reported at the group's 42nd annual membership meeting recently.

The record volume resulted in an all-time high of $3,539,521 operating margins for return to members. Mr. Beernink said these savings average $6 a ton on all formula feeds purchased during 1958, $8 for every $100 of farm supplies purchased, and $3.56 a ton for fertilizers.

Other highlights of the general manager's special message to members at the annual meeting included:

1. Egg marketing volume increased nearly 10% over 1957.

2. Deliveries of fryers were up 125%, and are expected to double in 1959.

3. Production of turkeys has not kept pace with increased consumer demands. To meet this deficit of production and to coordinate turkey marketing in the Northwest better, representatives of Oregon turkey growers and the Washington co-op have developed an integrated program of 1959 which provides improved breeding, feed, financing, processing and marketing of the combined crops of both states.

All incumbent officers of the cooperative were reelected. They are: Myron F. Hawley, Ferndale, Wash., president; Henry J. Hansen, Puyallup, Wash., vice president; Paul N. Howell, Marysville, Wash., secretary of the board, and Mr. Beernink, Seattle, general manager.

Harold M. Jackson, Kent, Wash., a former director whose position was eliminated due to redistricting a few years ago, was renamed to the board. Other incumbent directors returned to their positions are George Steph, Winlock, Wash.; Lawrence P. Harris, Yakima, Wash.; Kent E. Anderson, LaCenter, Wash., and James Andersen, Puyallup.

Chas. Vantress Farms Opens Another Plant

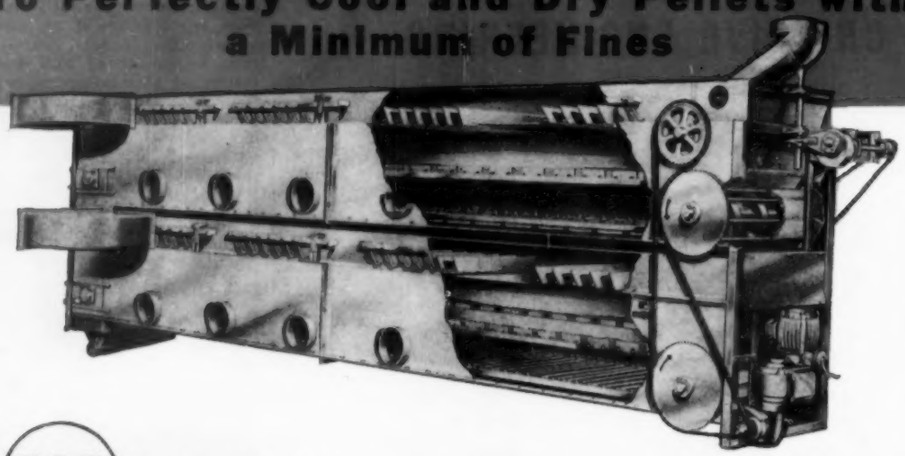
DULUTH, GA.—Chas. Vantress, Inc., Duluth, recently announced the opening of its seventh domestic poultry distribution plant. The latest plant is located at Oneonta, Ala., and customers in the Mississippi-Alabama area will soon be receiving Chas. Vantress dominant white males from this plant.

Alba Jeffcoat is moving from Duluth to Oneonta, to manage the new plant. All bookings and correspondence will still be handled out of the home office at Duluth.

KILLED IN CAR CRASH

MADISON, WIS.—A. Paul Kreager, 56, Madison, a sales engineer for the International Salt Co., was killed Feb. 23 in an auto accident near Springfield Corners.

To Perfectly Cool and Dry Pellets with a Minimum of Fines



Wenger ROLLER CHAIN MODEL HORIZONTAL PELLET COOLERS

HERE IS WHY... The Wenger ROLLER CHAIN MODEL PELLET COOLER/DRIER has no equal in the field of cooling and drying pellets.

● Roller chain model (illustrated here) has ¾" transverse steel rods, is equipped with rollers, supported on angle iron rails, linked together on 4" centers with steel plates, chain driven over a serrated head pulley, equipped with special fines pickup on foot pulley, woven wire mesh screen with welded selvedge, belt take-up, fines collection system and oscillating pellet spreader.

● Plenum chamber with adjustable louvers runs full length of each stage of cooler. This permits positive equalization of air movement through every square foot of belt area, and is not possible with any other cooler. Minimizes belt area required to do perfect cooling and drying job.

● Horizontal construction means all pellets get easy handling within cooler unit. They are properly dried. This means great reduction in fines. Variable speed drive permits adjustment of depth of bed to optimum for various sizes of pellets to be cooled. Cooling poultry pellets is relatively simple, and requires only a shallow bed of pellets. Cooling larger pellets, however, requires greater retention time in air stream since bound moisture is difficult to remove from the heart of a large pellet or range cube. This variable bed possible only in horizonal coolers.

● Wenger two stage horizontals (illustrated above) have plenum chamber and divider between lower and upper stages. This means that the driest air available is used to cool and dry pellets on both passes of coolers.

SINGLE STAGE

Available in single stage (only 41" height makes it ideal for suspension from ceiling beneath pellet mill to eliminate that old headache of hot legs), or in two stage superposed coolers (at top) which discharge pellets immediately beneath pellet inlet. Both built in 10', 12', 14', 18', 24', 30', 40', 50' lengths.

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You'll Never be Satisfied With Anything Less.

Write today for illustrated booklet, specifying tons per hour in largest pellet handled.

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SERVICE BULLETIN

for members of the feed and poultry industries

ENTERIC DISEASES OF SWINE

Diseases affecting the digestive tract (inflammation of the stomach and intestines) are considered the most important group of ailments affecting swine.

Other conditions, which may cause diarrhea, loss of appetite, and other symptoms associated with disorders of the intestinal tract, include poisoning (arsenic, mercury), overeating, sudden changes in the diet, the ingestion of spoiled food, parasitism and nutritional deficiencies (niacin, pantothenic acid), and edema disease of swine.

The chart on the following pages summarizes the salient features that characterize the most important enteric diseases of swine. Because of the similarity of symptoms and lesions, an accurate diagnosis and professional advice are essential to the establishment of a successful program for the control and prevention of swine diseases.

Reprints of this chart, and other articles in the series of Service Bulletins, with blank reverse sides suitable for imprinting, are available on request. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

DISEASE AND CAUSE	HOW SPREAD	KEY SYMPTOMS	CONTROL AND/OR PREVENTION
HOG CHOLERA **(Virus; may be complicated by bacterium — *Salmonella cholerasuis*)**	Direct contact with infected animals; contaminated feed and watering equipment; faulty handling of live-virus vaccines (vaccination of weak or parasitized animals); exposing susceptible hogs to recently-vaccinated animals (virus can be shed for 3 weeks)	Constipation followed by diarrhea; pigs dull, listless; lose interest in food; weak, stagger; show nervous symptoms **Onset:** Sudden; 5-10 days after exposure **Spread:** Rapid; 7-14 days **Temperature:** High; 106°–107°F.* **Mortality:** High; (especially in growing hogs) **Diagnostic Aid:** Virus isolation; laboratory inoculation of test animals **Normal temperature of the hog is approximately 102°F.*	**No effective treatment;** antibiotics and sulfa drugs may help control secondary bacterial complications; serum may be helpful during early stages of disease **Prevention:** Vaccination program under veterinary supervision recommended as prophylactic measure; (vaccinate 2 weeks before or 2 weeks after weaning or castration); quarantine pigs exposed in transit or in stockyards . . . keep separated from susceptible herds for at least two weeks.
TRANSMISSIBLE GASTRO-ENTERITIS **— TGE —** **(Large virus)**	Primarily by bowel discharges containing infectious agent; disease considered highly contagious among newly farrowed pigs; disease also may be air-borne, especially in close quarters	Scouring (some vomiting); profuse watery diarrhea; feces yellow-green, almost white in color; animals are dehydrated, show increased thirst; pigs may continue to eat or nurse but lose weight rapidly; rapid breathing **Onset:** Sudden; 18-24 hours after exposure **Spread:** Rapid; 2-3 days **Temperature:** Little or no rise **Mortality:** As high as 100% in pigs under 14 days of age; 1-2% in pigs 3 weeks of age and older; mature animals show mild, or no symptoms, no mortality **Diagnostic Aid:** Virus isolation and laboratory inoculation of susceptible hogs	**No effective treatment;** high-level antibiotic feed supplements or sulfa drugs may minimize secondary bacterial complications **Prevention:** move and scatter sows at farrowing time – keep sows and their litters segregated for 3 weeks (recovered sows pass on immunity to young—disease rarely occurs second year); do not introduce new stock during farrowing season; quarantine new stock for one week *or longer;* in extreme cases interrupting breeding so that no pigs are farrowed for 3 months will help bring condition under control
SWINE DYSENTERY **(a *Vibrio*)**	Spread mainly through bowel discharges containing vibrios; "recovered" sows or boars may be carriers of infection without showing symptoms; disease most prevalent in sales barns and stockyards	Frequent passage of watery feces containing shreds of mucus and blood ("rice-water stools"); young pigs most severely affected; loss of appetite, prostration, marked loss of weight; survivors unthrifty **Onset:** Variable, 7-9 days or longer after exposure **Temperature:** Little or no rise **Mortality:** 25% or higher, especially in suckling pigs and untreated herds **Diagnostic Aid:** No rise in temperature; absence of nervous symptoms (observed in hog cholera and edema disease)	Quarantine additions to herd for 2-3 weeks; antibiotic supplementation of feed or drinking water will help control losses, reduce severity of outbreak; in severe cases injection of streptomycin or dihydrostreptomycin sulfates may be indicated by veterinarian; recurrences are common; it may be advisable to treat herd until market time; may be necessary to vacate contaminated feeding grounds for 6-12 months

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DISEASE AND CAUSE	HOW SPREAD	KEY SYMPTOMS	CONTROL AND/OR PREVENTION
BACTERIAL ENTERITIS **(various *Salmonella* types; *S. cholerasuis* is important secondary invader in hog cholera outbreaks)**	Infective organisms present in bowel discharges; poor sanitation, faulty or inadequate rations may predispose to infection, especially in young animals; bacterial enteritis may be secondary complication associated with virus infections (such as hog cholera) or when animal is under stress	Weakness, diarrhea, failure to gain weight **Onset:** Variable; may depend on natural resistance of animal **Spread:** Fairly slow; once bacteria pass through one or more animals disease may spread more rapidly to others in herd **Temperature:** Slight rise, possibly one or two degrees **Mortality:** Variable; outbreaks in suckling pigs may, however, result in relatively high death rate **Diagnostic Aid:** Laboratory isolation and identification of causative organisms; eliminate possibility of primary virus infection	**Control:** Use of rations containing 100 Gm. of PRO-STREP® per ton of feed or VET-STREP® Granules (or AV-FORMULA® to the drinking water **Prevention:** Sanitation and adequate diet principal aids to prevention; animals should be well fed, well housed and protected against undue environmental stressors
EDEMA DISEASE OF SWINE† **— Gut Edema —** **(Cause unknown, may be toxic factor produced by *Escherischia coli*)**	Means of spread in doubt; outbreak may occur following change in feeding or other management practices; hog cholera postvaccination reaction (2-3 weeks) may "trigger" outbreak	Sudden, unexplained deaths in apparently healthy animals may be first indication of disease; young pigs 9-14 weeks of age usually affected; nervous symptoms include unsteady gait, staggering, paralysis, incoordination and eventual paralysis; swelling of eyelids; alteration of voice **Onset:** Sudden **Spread:** Rapid, but losses usually stop in 4-5 days **Temperature:** Normal **Mortality:** Moderate to severe, ranges from 4-40%; may go as high as 90% **Diagnostic Aid:** Postmortem examination needed to confirm diagnosis	**Control:** Epsom salts [60 Gm. (2 oz.) per hog in a thin slop] **Prevention:** Immediately following stress conditions or change in environment, feed a thin slop containing 2 oz. of Epsom salts per pig once weekly for 3 weeks
ERYSIPELAS† **(a bacterium, *Erysipelothrix rhusiopathiae*)**	Causative organism (excreted by infected animals in feces and occasionally urine) found in contaminated pastures; animals may be carriers and spread disease; sales yards, pork trimmings in garbage, and rarely, contaminated fish product (meal) also incriminated as sources of infection	Pigs are listless, refuse to eat; walk with stiff gait; some vomiting and diarrhea; in acute septicemic form sudden deaths, with no apparent symptoms; irregular red-purple patches (diamond-shape) appear on the skin on the second or third day of the outbreak **Onset:** Variable **Spread:** Variable; only few animals may be sick at outset of disease, infection may be acute in nature or run chronic course (with arthritis and heart lesions) **Temperature:** High, 105-110° F. **Mortality:** Variable; may go as high as 50 or 100% in severe, untreated outbreaks **Diagnostic Aid:** Postmortem findings and laboratory isolation and identification of causative organism	**Control:** Injections of penicillin, preferably under the direction of a veterinarian **Prevention:** Antierysipelas serum may be used alone, or in conjunction with penicillin to protect susceptible animals during outbreak; use of erysipelas vaccine (ERYSIPOGEN®) on farms where disease is problem recommended as successful prophylactic measure

†These conditions—edema disease of swine and erysipelas—while not considered enteric diseases, are included in the chart because of their related symptoms and/or lesions and the increasing importance of these diseases to the swine grower.

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For antibiotic fortification of swine rations–

make every ration a PROFITOPPER with low-cost dual-action

PRO-STREP®

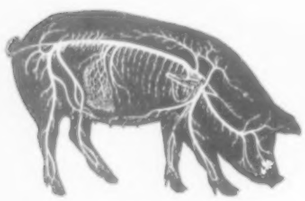
(a combination of procaine penicillin and streptomycin sulfate in a ratio of 1:3)

Starter and grower rations fortified with PRO-STREP will help swine growers get more pigs to market – healthier, heavier and more uniform in size . . . with greater feed efficiency!

Not all herds require the same level of antibiotic protection. On many well-managed farms, for example, as little as 25 grams of PRO-STREP per ton of feed will: *stimulate growth, improve feed efficiency, increase feed intake,* and *promote more uniform gains.* On other farms, however, somewhat higher levels of this effective combination of two antibiotics are required for optimum results.

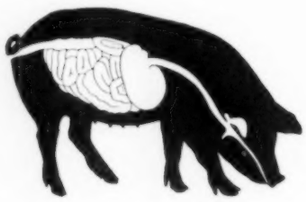
Fit The Ration To The Farm – Recommend starter and grower rations fortified with PRO-STREP, to fit the individual needs of the farm. Select a level that will produce the best results at the lowest unit cost. Now you can supply your growers with the exact amount of antibiotic fortification they need. And, whatever their needs–high, low or medium levels, recommend low-cost, dual-action PRO-STREP. There is a level of PRO-STREP for every ration–PROFITOPPER rations that will mean customer satisfaction and repeat sales for you. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

Pro-Strep – a combination of two antibiotics – procaine penicillin and streptomycin sulfate in a ratio of 1:3



PENICILLIN is absorbed and carried through the blood stream to every part of the body to effectively check many pathogenic, gram-positive organisms.

Penicillin also stimulates feed consumption, enhances weight gains and feed conversion. Grower is able to market more uniform pigs.



STREPTOMYCIN – Effective for prolonged periods of time in the intestinal tract, streptomycin acts against the gram-negative bacteria so often responsible for bacterial swine enteritis ("necro").

Streptomycin will not interfere with the action of beneficial intestinal flora.

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LOW LEVEL – 25 Gm./ton (18.75 Gm. streptomycin sulfate – 6.25 Gm. procaine penicillin)

Feed continuously to stimulate growth, improve feed efficiency, increase feed intake and promote better uniformity of gains.

MEDIUM LEVEL – 50 Gm./ton (37.5 Gm. streptomycin sulfate – 12.5 Gm. procaine penicillin)

Feed continuously until pigs are 50 to 75 pounds to: prevent bacterial swine enteritis; stimulate growth; improve feed efficiency; stimulate feed intake; and help promote better uniformity of gains. If outbreaks of enteritis occur, feeds containing 100 Gm. of PRO-STREP should be used.

HIGH LEVEL – 100 Gm./ton (75 Gm. streptomycin sulfate – 25 Gm. procaine penicillin)

To treat bacterial swine enteritis, feed rations fortified with PRO-STREP for 4 to 5 days or until symptoms disappear. PRO-STREP at the 100 Gm. level also may be used until pigs are 50 to 75 pounds to: stimulate growth, improve feed efficiency, increase feed intake and assure better uniformity of gains.

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MERCK & CO., INC. ®MERCK BRAND FOR AN ANTIBIOTIC FEED SUPPLEMENT

NEW HAMPSHIRE SPEAKERS—Latest findings in poultry disease research were given a thorough discussion by this group of scientists and industry representatives at the recent University of New Hampshire Poultry Health Conference held at Durham, N.H. They are (left to right): Roger Clement, Beacon Milling Co., Manchester, N.H.; Dr. George P. Faddoul, University of Massachusetts diagnostic laboratory, Waltham, Mass.; Dr. Roy Luginbuhl, University of Connecticut, Storrs; Dr. S. B. Hitchner, American Scientific Laboratories, Madison, Wis.; Dr. Morris S. Cover, University of Delaware, Newark; Dr. K. E. Price, Chas. Pfizer & Co., Inc., Terre Haute, Ind.; Dr. S. A. Edgar, Alabama Polytechnic Institute, Auburn, and Emory Peacock, Unity Grist Mill, Manchester, N.H.

AMS Reports on Flax Marketing Cost Study

WASHINGTON — Ways to offset the higher elevator costs of marketing flaxseed were reported by the Agricultural Marketing Service recently following a survey of 265 elevators in Minnesota and the Dakotas.

Reporting on the survey in Agricultural Marketing, publication of the service, W. M. Manion and C. Milton Anderson, agricultural economists located at St. Paul, Minn., said the higher cost of marketing flaxseed can be offset to a large degree by larger gross operating margins, cleaning the seed to reduce freight charges and increased returns from the sale of screenings.

The report said researchers found that freight costs accounted for 70% of the 40¢ bu. price spread between farmers and terminal buyers. Other transportation charges came to 10%, and the gross elevator margin accounted for almost 20% of the total marketing spread per bushel of flaxseed.

Freight expenses ranged from an average of 56% of the marketing dollar in Minnesota to 73% in North Dakota. This resulted in a 23¢ bu. price differential paid by elevators to growers whose farms are located at the eastern and western boundaries of the tri-state area, the report said.

It was pointed out further that about 10% of the freight charges result from the transportation of dockage. Less than 40% of this dockage is removed at the elevator, so about 60% is shipped on to terminal markets at elevator expense.

Flaxseed received at country elevators contained about 16.3% dockage during the 1955-56 crop year. While the amount of this dockage is reduced to about 10.3% at the elevator, the cost of shipping the dockage which remains in the flaxseed runs about 3¢ per net bushel of flaxseed.

The cost of cleaning flaxseed varies inversely with the volume handled, the report said. In the elevators studied by AMS, cleaning costs averaged 1.7¢ bu. for elevators cleaning 50,000 bu. annually, but 5¢ bu. for those cleaning a volume of only 5,000 bu. Screenings may be sold at an average of 1.5 to 3.5¢ per net bushel of flaxseed.

By screening flaxseed an elevator operator gains a 5 to 15% increase in operating space and boxcar capacity. The report said that at most elevators which clean 10,000 or more bu. of flaxseed, the savings on freight costs alone would more than offset cleaning costs. The return from screening sales then becomes a bonus.

Although most country elevator operators generally use boxcars to ship flaxseed, the report said that in areas where both rail and truck transportation are available, truck costs average 1.8¢ bu. lower than rail. Truckers have the advantage in areas close to terminal markets. Railroads have a slight edge or are equal with trucks in shipments from distant elevators.

BROILER GROWER NAMED

CLERMONT, GA.—Roy Truelove, broiler grower in Hall County, Georgia, has been named to the national poultry advisory committee of the American Farm Bureau Federation as southeastern representative. He was appointed by Charles B. Shuman, AFBF president. Mr. Truelove grows 22,000 broilers, and is president of the Hall County Farm Bureau.

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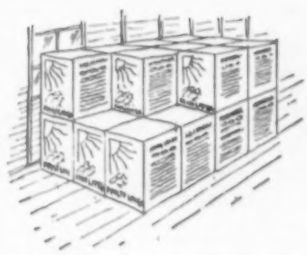

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Ideas for Feeding Growing-Finishing Swine in Confinement

Confinement feeding of swine continues to increase. Here are some suggestions on ration formulation and feeding programs for pigs finished in confinement.

By Dr. T. J. Cunha
Florida Agricultural Experiment Station

Dr. T. J. Cunha

AUTHOR — Dr. T. J. Cunha was reared in California and attended college in California, Utah and Wisconsin. He received his Ph.D. in animal nutrition at the University of Wisconsin in 1944. Dr. Cunha was on the staff at Washington State College from 1944 to 1948 and moved to the University of Florida, Gainesville, in 1948. He has thus had experience in most areas of the country and is familiar with feeding problems in various parts of the U.S. He became head of the department of animal husbandry and nutrition at Florida in 1950. Dr. Cunha has been a member of the swine nutrients requirement committee of the National Research Council since 1951. In 1956 he was chosen "alumnus of the year" at California Polytechnic College. He is author of the widely used text "Swine Feeding and Nutrition," published in 1957.

At the present time it is estimated that 30 to 40% of all pigs are being finished in confinement (dirt and concrete dry lots). It is also estimated that in five years this may increase to 60% and to at least 75% in 10 years. There are some who think that as high as 90% of all growing-finishing pigs will be fed in confinement 10 years from now. Whether or not confinement feeding develops as rapidly as estimated, the trend is definitely toward this method of finishing pigs.

In some cases confinement feeding is referred to as "pig parlor" feeding, whereas others call it growing pigs out on concrete or even in dirt lots. Confinement feeding is on the increase because in many areas of the country, land values have increased to the point where it does not pay to fatten pigs on pasture. The land will give greater returns when used to grow corn or other crops. Moreover, the newer knowledge of swine nutrition has made it possible to compound rations which give as good, or even better results, than fattening pigs on pasture. In the early experiments on pasture vs. drylot feeding, the pasture was covering up many nutritional inadequacies of the drylot rations used then. With present up-to-date rations which are adequate in amino acids, vitamins and minerals, the special nutritional value which pasture used to have is no longer apparent in most all cases for the growing-finishing pig. However, it is still recommended, on the basis of present knowledge, that breeding animals or those being grown out for herd replacement be kept on high quality pasture as much as possible.

Returns from Pasture Are too Low: The following summary compiled by Dr. H. B. Geurin (1) is typical of present day information on dry lot versus pasture feeding:

	Dry-lot	Pasture
No. test comparisons	69	69
No. of hogs	633	640
Average daily gain	1.48	1.40
Feed per 100 lb. gain	324	315
Feed saved per pig from weaning to market by pasture, lb.		16
Feed saved per 100 lb. gain by pasture, lb.		9

The preceding data were compiled from the following: Illinois Swine Day Reports 1956-57; Purdue Swine Day Reports 1956-57; South Dakota Farm and Home Research, 1956; Kansas Livestock Feeders Day Report, 1957; Tennessee Feeders Day Report, 1957; and Nebraska Swine Progress Report, 1957.

The 16 lb. of feed saved per pig by pasture would be worth from 48 to 64¢ if feed costs were 3 or 4¢ per pound, respectively. Assuming that 20 pigs were run on each acre, this would be a return of $9.60 to $12.80 per acre of pasture. It must also be considered that the pigs gained a little slower on pasture. These low returns on pasture are one of the big reasons why more and more swine producers are going to confinement feeding.

A recent Florida experiment (2) is in good agreement with Dr. Geurin's summary. Excellent quality legume pasture saved only 18.1 lb. of feed per weanling pig being fattened on pasture as compared to drylot. The value of the feed replaced per acre of pasture was $12.67. Pigs restricted to 80% of a full ration on pasture, had 29.7 lb. of feed saved per pig by the pasture. However, the value of feed replaced per acre of pasture was only $11.78 since the carrying capacity was less and the pigs gained at a slower rate than those full-fed on pasture.

Multiple Farrowing Increases Need for Year-Round Feeding Facilities: In most areas, the pasture season is short and thus is available only for part of the year. Thus, the farmer who fattens pigs the year around, also needs drylot fattening facilities. The trend is also toward more multiple farrowing. This trend will also tend to cause more farmers to develop adequate confinement feeding facilities since pigs would be available for year-round feeding. Moreover, this trend allows the farmer to utilize his feeding facilities the year around and thus realize maximum returns on the investment.

Confinement Feeding Requires Excellent Rations: The farmer who goes to confinement feeding will need to feed excellent quality, well-balanced rations. He will no longer have pasture to cover up some of the sins or omissions of a poor quality, unbalanced ration. Thus, he will need sound advice on proper feeding and management procedures.

Complete Mixed Rations vs. Free-Choice Feeding: A summary of information obtained to date shows that pigs fed complete mixed rations in drylot or on pasture usually gain a little faster than those fed free-choice (corn and supplement fed separately). The economics of the gains are usually in favor of free-choice feeding. This is due to the extra cost of grinding and mixing. However, there is considerable variation in the results. These differences are due to the conditions under which the experiments are conducted. This means that conditions on the farm will determine which system of feeding will be the most economical. The swine producer will need to balance the cost of grinding and mixing against the inefficiency of overeating or undereating of the protein supplement which may occur if it is self-fed. Protein supplements need to be compounded so that they will not be too palatable, thus encouraging overconsumption by the pigs. The efficiency of free-choice feeding will also depend on the palatability of the grain used.

Under some conditions, complete rations will be best, whereas in others free-choice feeding of grain and supplement will be best. In most cases, however, the farmer will use some complete rations and will also free-choice others, depending on the stage of the life cycle of the pig and how its overall requirements can best be met. Many feeders are using complete mixed rations for young pigs when their nutritional needs are most critical — or until the pig weighs about 75 lb. There is also an increasing trend toward the use of complete mixed rations for older pigs, especially if they are fed in confinement. This is especially the case where the farmer uses bulk delivery and can get protein supplements mixed with his corn in the desired ratio to give a balanced ration. This is done as a means of better controlling the nutrient and antibiotic intake rather than trusting the pigs to consume the correct amount which sometimes does not occur with self-feeding.

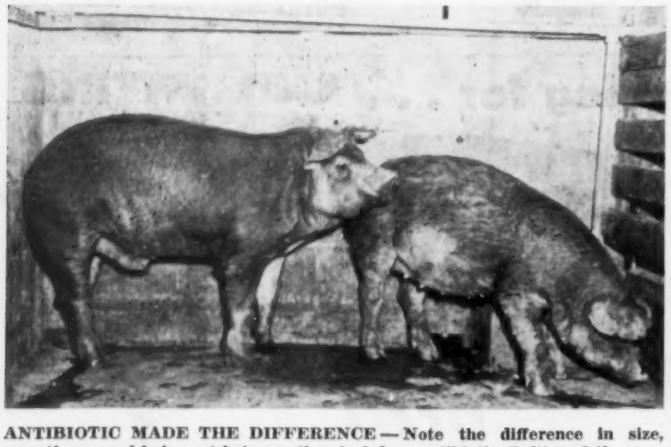
Thus, the farmer can experiment a little on his own and decide which is best for him. Many who are feeding in confinement buy protein supplements and mix them with corn themselves in various ratios depending on the weight of the pig.

Time Required to Finish Pigs: For best results, pigs should be grouped according to size and age. A pig parlor operator could group the pigs according to size and have different pens with different rations in them in line with the protein level and other nutrients needed. Thus, as a group of pigs increased to a certain weight, they would be shifted to the

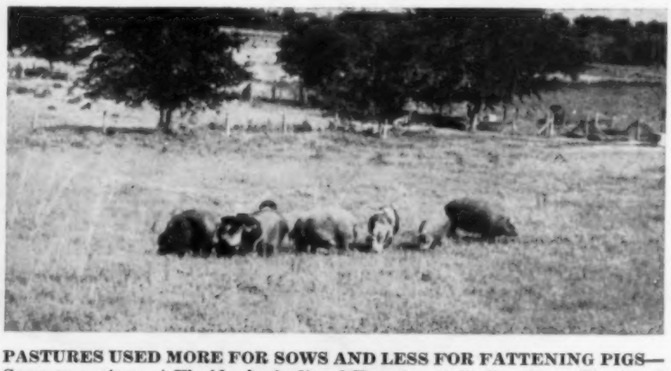
TABLE 1. Rate of Gain and Time Required to Grow and Finish Pigs

Pen number	1	2	3	4	5
Weight of pigs, lb.	25-50	51-75	76-100	101-125	126-200
Daily gain expected,* lb.	1.0	1.3	1.5	1.65	1.8
Days needed in each weight category	25	19.3	16.7	15.1	41.7

*These gains can be exceeded under excellent conditions of feeding and management. These figures represent good gains.



ANTIBIOTIC MADE THE DIFFERENCE — Note the difference in size, smoothness and hair coat between the pig fed an antibiotic (left) and the control animal fed none. Antibiotics will increase growth an average of 10 to 20% and increase feed efficiency about 5%. (Photo courtesy Florida Agr. Exp. Sta.)



PASTURES USED MORE FOR SOWS AND LESS FOR FATTENING PIGS— Sows on pasture at Florida Agricultural Experiment Station farm. The trend is for less pasture to be used for growing-finishing pigs. More pigs are being finished in confinement since more returns can be obtained by using the land for other purposes. (Photo courtesy Florida Agr. Exp. Sta.)

midwest alfalfa
Prairie Village 15, Kansas
(Kansas City, Mo.)

TABLE 2. Ratio of 8.5% Protein Corn to Three Different Protein Supplements to Give Balanced Protein Rations

SUPPLEMENT No.	Protein level, %	Feeds used	Weight of pigs 25-50	51-75	76-100	101-125	126-200
		Corn, lb.	70	77	80.5	83.5	87.5
1.	36.5	Supplement, lb.	30	23	19.5	16.5	12.5
		Corn, lb.	71.5	78.5	81.5	85.0	88.5
2.	38.5	Supplement, lb.	28.5	21.5	18.5	15.0	11.5
		Corn, lb.	73	79.5	82.5	85.5	89
3.	40.2	Supplement, lb.	27	20.5	17.5	14.5	11
Protein in total ration, %			17	15	14	13	12

next pen where a lower level of protein and other nutrients is being fed. The farmer could always feed the same ration in each pen and could shift the pigs as their weights reached the desired level for the ration fed in that pen.

Table 1 shows the time required to grow and finish pigs in the various weight categories. It also gives the rate of gain which might be expected.

The data in Table 1 show the following for the whole period from 25 to 200 lb.

(a) Number of days to finish pig—117.8.

(b) Average rate of daily gain—1.49.

This means it takes about four months to fatten a 25-lb. pig. The top swine producer with good breeding, feeding and management can increase the rate of gain and decrease the time required to finish a pig. The figures in Table 1 are a good goal for the average producer.

Protein Needs: The following protein levels are suggested for the growing-finishing pig fed in confinement:

Wt. of pig, lb.	Protein in total ration, % Probable need	Suggested level to use
25	16	17-18
50	14	15
75	13	14
100	12	13
125-200	10-11	12

The suggested levels to use are higher than has been shown to be needed in many cases. Somewhat higher levels are suggested in order to provide some protection against poor quality protein supplements and/or other feeds used. It is realized that the 125-lb. pig can get by with 10 or 11% protein. However, grains will many times supply this amount of total protein. Since grains are low in certain amino acids, it is recommended that grain not be used as the sole source of protein for heavier pigs which need only 12% or less protein in the ration. It is suggested that enough of a protein supplement be added to insure an adequate amount and a proper balance of the amino acids.

Ratios of Corn to Protein Supplement: Table 2 gives information on the ratio of 8.5% protein corn and protein supplements with varying levels of protein for pigs from 25 to 200 lb. These are given as a guide as to the level of supplement needed as the pig increases in size.

The figures in Table 2 show the importance of dividing the pigs into different groups and of feeding rations according to the pigs' needs. A frequent change in the ratio of corn to protein supplement will mean a considerable saving in protein, other nutrients and antibiotics since the need decreases as the pig increases in weight. The weight categories listed might be followed by the large feeder who could afford feeding facilities with enough pens to change the pigs to different levels of protein frequently. Five pens and five different ration changes would take care of finishing 25-lb. pigs to market. Where five weight categories are not feasible the following two systems could also be followed:

	Per cent protein in ration
Weaning to 75 lb.	16
75 lb. to 125 lb.	14
125 lb. to market	12
or	
25 lb. to 50 lb.	17
50 lb. to 100 lb.	15
100 lb. to 150 lb.	13
150 lb. to 200 lb.	12

Suggested Supplements to Use: There are many different kinds of supplements which can be used. The supplement shown in Table 3 is an example of one which can be used.

This supplement can be self fed with grain or it can be mixed with grain to give the desired protein level

TABLE 3. Suggested Supplement by Illinois Station (4)

Feeds*	Supplement (lb.) unless otherwise indicated Pig***	Hog**
Soybean meal	800	800
Cottonseed meal, linseed meal or peanut meal†	200	200
Tankage, meat scrap, meat and bone scrap or fish meal	300	400
Dried whey, dried skim milk, fish solubles or dried corn distillers solubles	200	100
Dehydrated alfalfa meal	300	300
Ground limestone	80	80
Steamed bone meal, dicalcium phosphate or equivalent	80	80
Trace mineralized salt or salt plus trace minerals	40	40
	2000	2000
Approximate protein content, %	35	38
Plus the following per ton:		
B-vitamin premix‡		
Riboflavin, grams	5	3.75
d-calcium pantothenate, grams	10	7.5
Niacin, grams	10	7.5
Vitamin B_{12}, mg.	30	40
Vitamin D_2 or D_3, million units	1	1
Antibiotic, grams	50	50

*These are only examples; other examples may be equally good or perhaps better.
†Soybean meal may replace cottonseed, linseed or peanut meal; or vice verse, up to 25% of the total.
‡Some variation in the level of B-vitamins can be made depending on the choice of feeds used since some feeds are considerably higher than others in B-vitamins.
**When hogs are exposed to sunlight daily, the vitamin D additions are not necessary.
***Pig supplement is to be fed in dry lot with home grown grains from weaning to 75 lb. in weight. The hog supplement is to be fed in dry lot from 75 lb. to market weight.

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TABLE 4. Level of Alfalfa Intake by Pig Fed a Protein Supplement Containing 15% Alfalfa

Weight of pig, lb.	Level of alfalfa meal: In supplement %	Level of alfalfa meal: In total ration* %	Daily intake by pig, lb.
35- 50	15	4.8	0.127
51- 75	15	3.75	0.137
76-100	15	3.15	0.146
101-125	15	2.55	0.154
126-200	15	1.95	0.137

*Decrease as pig grows heavier since less supplement and more corn is used.

for pigs in various weight categories.

Some variation can be made in the levels of feeds used and the vitamin and/or mineral supplements added depending on the choice of feeds made. The suggested Illinois supplement, however, is an example of a well balanced supplement which can be used as a guide in compounding supplements for confinement feeding of pigs.

Justification for Sources of Unidentified Factor(s) in Supplements or Complete Rations: Many experiment stations have obtained good results in fattening weanling pigs in drylot with very simple corn-soybean meal rations properly supplemented with vitamins, minerals and antibiotics. However, these animals have not been followed up and studied to determine if they have developed normal reproductive tracts and thus would be good producing replacement animals for the breeding herd. The writer recalls one of his first swine experiments which showed that the ration which gave the best results during growth gave the poorest results during reproduction. Thus, the fact that a ration gives a good, or even the best rate of gain and feed efficiency during growth, is no assurance that the ration has been adequate to develop a normal reproductive tract so that the animal can conceive, reproduce and lactate later on.

Studies at Wisconsin (5), Washington (6), Purdue (7) and other stations have shown that high-quality alfalfa meal contains some unidentified factor(s) which are of value for pigs during growth and influence the ability of the pig to conceive, reproduce and lactate many months later. Thus, until it is demonstrated that pigs grown in confinement without alfalfa meal develop normal reproductive tracts and are able to reproduce and lactate adequately later on, the writer will continue to emphasize the importance of high-quality alfalfa meal for animals fed in confinement and from which herd replacements are selected.

The writer would recommend that the 35 to 40% protein supplement used contain about 15% of high quality dehydrated alfalfa meal. Table 4 shows some information regarding the alfalfa meal intake of the growing-finishing pig fed corn and a 35% protein supplement containing 15% alfalfa meal.

The data in Table 4 show that even though the percentage of alfalfa in the total ration decreases as the pig increases in size, the actual total intake of alfalfa daily is a little higher because of the higher total feed intake by the pig. If two different protein supplements were being used (one for lighter pigs and one for heavier pigs), the writer would recommend a higher level of alfalfa in the supplement for the heavier pig after it reaches 100 or 125 lb. in weight since the heavier pig can utilize higher levels of alfalfa more efficiently than the young pig.

The author would also recommend that the mixed protein supplements used contain some high quality animal protein supplement such as tankage, fish meal, meat scraps or meat and bone scraps. It needs to be emphasized, however, that these animal protein sources need to be high quality products which are good sources of minerals, vitamins, amino acids and unidentified factors. Strong consideration also needs to be given to the use of an unidentified factor source such as dried whey, dried skim milk, fish solubles, dried distillers solubles and others. They are excellent sources of many nutrients as well as unidentified factors. These sources of unidentified factors are particularly desirable for supplements or rations used for the young pig. They are recommended for the same reason alfalfa meal is recommended.

TABLE 5. Effect of Ambient Air Temperature and Mean Liveweights on Daily Rate of Gain in Swine

Mean liveweight, lb.	Air Temperature, °F. 40°	50°	68°	70°	80°	90°	100°	110°
100		1.37	1.58	2.00	1.97	1.40	.39	—1.32
150	1.27	1.47	1.75	2.16	1.82	1.14	— .19	—2.60
200	1.19	1.57	1.91	2.22	1.67	.88	— .77	
250	1.10	1.67	2.08	2.14	1.51	.62	—1.36	
300	1.02	1.77	2.24	2.06	1.36	.36	—1.95	
350	.94	1.87	2.41	1.98	1.21	.10	—2.53	

The writer wants to be assured that the growing-finishing pig is receiving all the nutrients it needs and is also developing a normal reproductive tract so that it will be able to conceive, reproduce and lactate at a maximum rate if kept for replacement purposes.

Many studies are needed with modern up-to-date rations properly fortified with vitamins, minerals and possibly amino acids, to determine how many and/or how much of these other feeds need to be added to a corn-soybean meal ration for growing-finishing pigs in confinement. The animals fed in such experiments would also need to be followed up and studied during reproduction and lactation to determine if the ration fed during growth had prepared them sufficiently for the added stress of conception, reproduction and lactation.

Should Feed Be Pelleted? There is considerable interest in the pelleting of feeds for swine feeding. The big question is "Will the advantages derived pay for the cost of pelleting?" In some cases it will, whereas in others it may not. Some of the advantages of pelleting are:

1. There is less feed wastage due to dust losses or sorting out of feed by the pig. Spilled pellets are more easily recovered than spilled ground feed.
2. Reduces bulk and storage space and permits easier handling of feed.
3. Results in a homogeneous feed which means better control of nutrient intake.
4. Improves palatability. This is especially the case when the ration contains powdery materials which the animal usually dislikes. Allows the animal to consume certain feeds which otherwise it might refuse.
5. Increases density of the feed, which means more total feed intake by the pig, which improves rate of gain and efficiency of feed utilization. This is particularly helpful with bulky rations which contain barley, oats, alfalfa meal, etc.
6. Helps the feeder who wishes to use unground farm grains with a commercial protein supplement. A pelleted protein supplement will mix much better with unground grain than a finely ground supplement.

Information obtained to date indicates that pelleting itself probably does not increase the nutritional value of feeds. This was indicated in North Dakota work (9) which showed that pelleting and regrinding a ration for feeding in meal form did not appreciably improve rate of gain or feed efficiency. The increased rates of gain and feed efficiency obtained due to pelleting seem to be explained in large part on the basis of a larger intake of total feed daily. A recent review by Dr. L. V. Curtin (8) is indicative of the present information on pelleting for the pig. He presented the following summary:

	Percentage increase in: Rate of gain	Feed efficiency
1. Pelleted rations containing barley at North Dakota, Montana, Illinois & Idaho—10 experiments ..	14	15
2. Pelleted rations containing corn at North Dakota, Illinois, Purdue & Michigan State—4 experiments	4	6

The above summary indicates that pelleting benefits are the greatest with bulky feeds such as barley. The North Dakota work (9) would seem to indicate a definite advantage for pelleting barley rations. More studies are needed on the value of pelleting corn rations for pigs from 25 to 200 lb. There are indications that pelleting is more beneficial with younger pigs, which means that more studies are also needed with starter rations as well as those used in creep feeding.

Temperature Control Helpful: Considerable data are accumulating which show that the use of some cooling system is beneficial for growing-finishing pigs during warm weather. Iowa work (10) showed that pigs over 100 lb. raised in confinement showed a drop in daily gain and feed efficiency of 0.05 lb. per day and 0.05 lb. feed per pound of gain, respectively, for each degree F. of average temperature rise from 80-85° F. This means a decrease of 0.25 lb. per day in rate of gain and 0.25 lb. more feed per pound of gain as the temperature increased from 80° to 85° F. The data shown in Table 5 by California workers (11) emphasizes the importance of temperature on animal growth response.

These data show that the best gains are obtained at a temperature between 60 and 70° F. The data also

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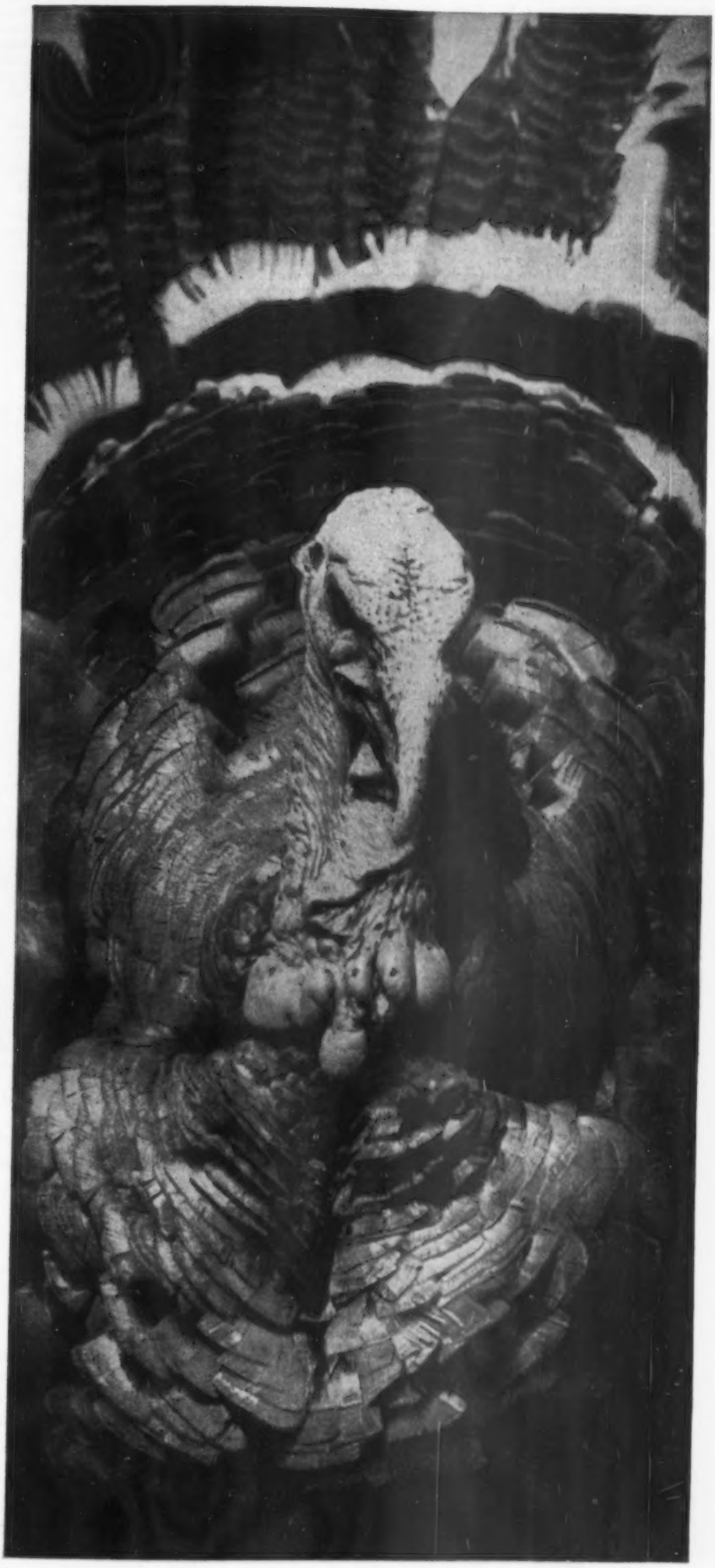

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show that the bigger the pig is, the poorer it does as the temperature increases. California workers (12, 13, 14) found that an increase in air temperature also increased body temperature, respiratory rate and pulse rate. At 96° F., a rise in the relative humidity from 30 to 94% produced rapid distress in pigs weighing over 200 lb.

It is evident that the heat regulating mechanism of the pig is rather poor. Thus, much study is indicated for the future in providing feeding facilities which will provide near optimum temperatures for best performance by the pig. Not only should this provide a means of cooling (such as sprinkler, fine mist spray, fan, wallow, cooled air or air conditioning) but it should also take into account warming during the cold, wet winter months, since pigs do not perform as well during cold weather. The progressive producer of the future may well control temperature and humidity in order to obtain maximum rate of gain, feed efficiency and reproduction rate. Temperature control may also affect carcass quality since Michigan workers (15, 16) have shown that the pigs fed at a 40° F. environment had higher blood fat levels than those fed at 80° F. The pigs at 80° F. had thicker backfat and the primal cuts were greater at 40° F.

Antibiotics: The status of antibiotics for swine feeding was recently reviewed by the writer (3, 21). Many questions are being asked concerning whether antibiotics are losing their effect. In the writer's opinion, pigs fed antibiotics grow as rapidly today as pigs fed similar rations in past years. What has happened is that the control pigs are doing better and narrowing the difference due to antibiotic feeding. This is due to the cleaning up of contamination from growth-inhibiting microorganisms by the antibiotics in the quarters where they have been used continuously.

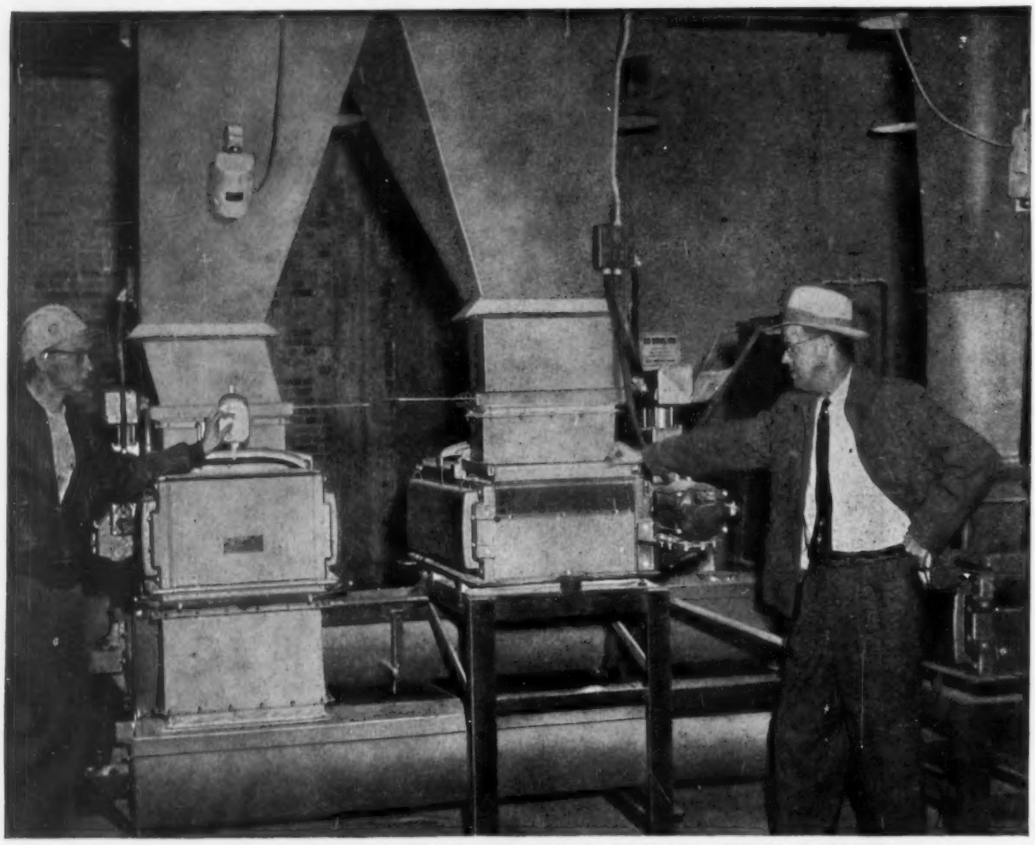
Most investigators feel that if antibiotic feeding were discontinued, the pigs not fed antibiotics would revert to the previous performance of pre-antibiotic feeding. Thus, their continued use is recommended on the basis of present knowledge. It is also recommended they be fed throughout the growing-finishing period, since it has been shown that when antibiotics are fed to a weight of 100 to 125 lb. and then dropped from the diet, the pigs slow down in rate of gain. Feeding them throughout the growth period is also good insurance against certain stress conditions which might occur.

The level of antibiotic to use will vary depending on stress factors encountered. A suggested therapeutic level for poor-doing pigs may vary from 50 to 150 grams per ton of a complete feed, depending on the condition of the pigs and how the feed is to be used. If the pigs are in very poor condition and will not eat, then the antibiotic should be given in the drinking water. Pigs will usually drink even though they may not eat.

Arsenicals and Other Antibacterial Compounds: Arsenicals are increasingly being used in swine feeds. They have been shown to increase rate of gain and feed efficiency. Certain of them are also very effective in the control of bloody dysentery. Minnesota (17) and Ohio workers (18) have shown that a level of 0.05% of arsenical acid in a protein supplement for free-choice feeding with grain gives good results. The Purdue station (19) obtained good results with arsanilic acid at a level of 90 grams per ton of total ration. The Iowa station (20) has used a level of 0.0025% of 3-nitro-4-hydroxyphenylarsonic acid in the ration with good results. These levels of arsenicals should be used as guides for those who wish to use them. Arsenicals are toxic compounds when fed in excess. One needs to be careful in using them since there is a fairly narrow range between toxic levels and those needed for optimum growth and control of scours. Many feeders are now using a combination of an arsenical and an antibiotic, particularly where enteric disorders, other diseases and stress factor conditions are apt to occur.

Other antibacterial compounds such as furazolidone and a combination of streptomycin-sulfaquinoxaline have been helpful in some experiments (21). However, more studies are needed with those and other compounds to determine more adequately their role in the nutrition of the pig as well as in the control of enteric infections.

Amino Acid Supplementation: The three essential amino acids which are apt to be low or borderline in swine rations are methionine, lysine and tryptophan, and occasionally it is possible that histidine may also be borderline (3). A great deal of work has been done with the amino acid needs of the pig during the last few years (3, 21). However, there is very little information available on the value of supplementing well balanced swine rations. The amino acid supplementation problem is a complex one and accounts for the inconsistent results obtained by many workers. Sometimes they get beneficial results and other times they do not. This is because the amino acids need to be fed at the right level, in the correct proportion to each other and also at the right time with the other amino acids for maximum response. In addition, the requirement for amino acids varies with the type of diet, the relative supply and availability of amino acids and also with the dietary intake of other essential substances which can, in case of need, be made from an amino acid. Thus, on the basis of present knowledge, there is little information available to make recommendations regarding the ami-



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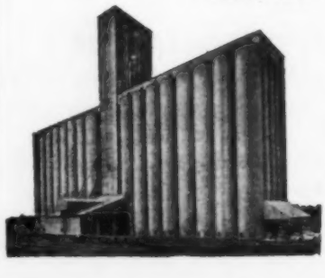

no acid supplementation of well balanced rations. Indications are, however, that such information should become available in the not-too-distant future.

Summary: These suggestions on feeding growing-fattening swine in confinement cover only some of the nutritional cover and do not touch housing, management and other problems. Many studies are now underway to provide answers to some of these problems. The definite trend toward confinement feeding of growing-finishing pigs necessitates answers to the following problems: (1) Provision of a steady source of high-quality meat-type feeder pigs, (2) methods of disposing of manure and urine from feeding floors, (3) value and economics of some form of temperature control throughout the year, (4) disease and parasite control measures for feeding floors used continuously, (5) floor space requirements and types of housing most suitable and economical for various localities, (6) evaluation of rations and various methods of feeding to determine the most profitable to use, and (7) marketing programs which will insure the feeder a good price for a quality animal bred and fed to meet what the consumer demands—a meat-type pig. Undoubtedly there are also many other problems. However, the answers to these problems will be needed in order to develop confinement feeding on a sound basis.

× ×

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S. L. Freeman Retires From Wirthmore

WALTHAM, MASS. — Stanley L. Freeman has retired as director of agricultural relations for Wirthmore Feeds, Inc., here, it was announced. He joined the Wirthmore organization as a dairy serviceman for Eastern Grain Co. in 1930, and subsequently served as director of dairy service, director of dairy research and for the past few years as director of agricultural relations.

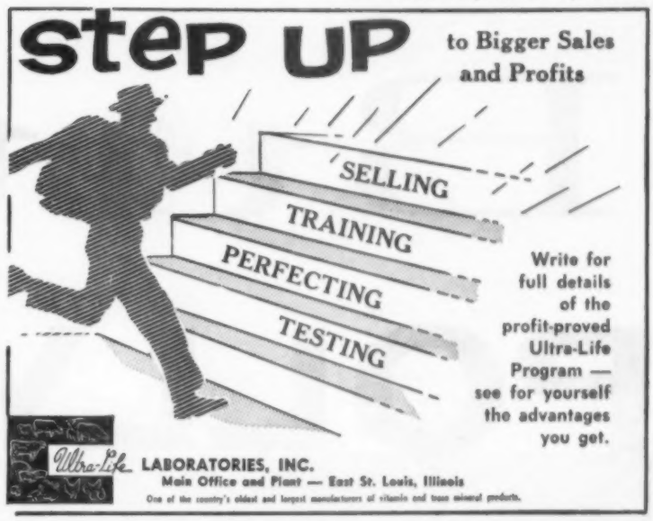
Mr. Freeman counts among his friends many youngsters in 4-H and Future Farmers of America, two groups in which he took an active interest. He is the recipient of many agricultural honors throughout the East.

Mr. Freeman plans to devote more time to his hobby of photographing marine life. Considered an expert in this field, he collaborated with Rachel Carson, who wrote best-sellers "Edge of the Sea" and "The Sea Around Us," in illustrating some of her lectures.

He resides with his family in West Bridgewater, Mass.

$75,000 FIRE

HARDWICK, VT.—Large quantities of grain, fertilizer and farm equipment were lost when fire destroyed the W. S. Hill farm products store here. Losses were estimated at $75,000.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- Reserve Grand Champ. Live Tom
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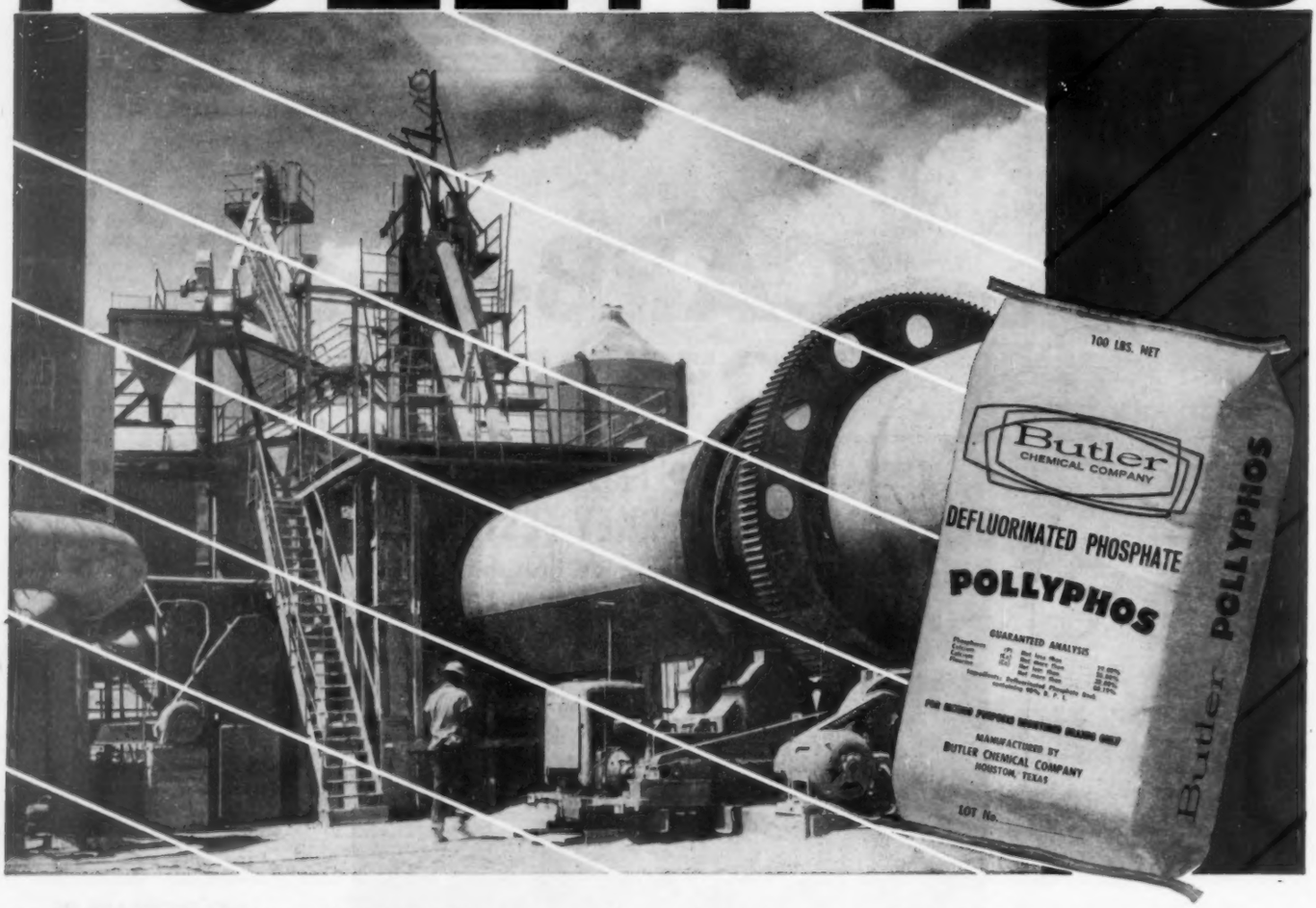

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Turkey Trot Talk Favors Proposed Marketing Act

WEST LAFAYETTE, IND. — The proposed National Turkey Marketing Act was described by M. C. Small, executive secretary-treasurer, National Turkey Federation, at the recent 15th annual Hoosier Turkey Trot here as "something . . . which would give us a chance to try to solve our problems without controls, quotas and all the other things which kill free enterprise and simply aggravate our problems."

Mr. Small, profoundly in favor of the "enabling act," said critics have raised "all kinds of objections" against it.

He said the most common criticism of the National Turkey Marketing Act is that it will not work because "it will not make it profitable for everyone in the turkey business." The Turkey Trot speaker answered this objection by saying that the enabling act "provides tools whereby turkey people can help themselves without putting limitation on free enterprise."

Another common criticism, according to Mr. Small, is that while the enabling act does not contain production control features, it would lead to production controls. "One of the primary reasons why the enabling act was developed was to avoid production controls," Mr. Small said. "It would require an act of Congress to amend the enabling act to include production controls."

He also remarked, "If we stand idly by, doing nothing except feeling sorry for ourselves, we will find ourselves harnessed and harassed by a production control bill."

Turkey of the Future

Alex Gordeuk, general sales manager, Nicholas Turkey Breeding Farms, Sonoma, Cal., predicted that the turkey of the future will play "a very important role as a meat animal in tomorrow's agriculture."

Mr. Gordeuk said the turkey of the future: (1) Will be white, because a white-feathered turkey has more economic advantages than a bronze-feathered turkey; (2) will very likely be a large, all-purpose bird, because large birds have a distinct advantage over smaller type birds in the area of feed conversion; (3) will likely be a cross; (4) will grow fast and reach market maturity early; (5) will be fed complete rations from start to finish; (6) will produce 50 poults per hen per season; (7) will be raised the year around; (8) will be made available to the public in more ways than ever, and every day; (9) will be a "specification product," with the grower producing for a market rather than to market; (10) will be a product of the agri-business production team—the breeder, the hatching egg producer, the hatcheryman, the grower, the feed man, the allied industryman, the processor, who more and more will asume the role of distributor, and the retailer, and (11) will be a highly competitive meat animal in the American animal industry.

Dr. Wilson Henderson, department of veterinary science, Purdue University, was moderator of a panel discussion of turkey diseases, including bluecomb, pullorum, fowl typhoid, paratyphoid, paracolon, infectious sinusitis (swellhead), blackhead and others.

Panel members were Dr. L. E. Barnes, Eli Lilly & Co.; Dr. F. D. Knippling, Merck & Co., Inc.; Dr. J. E. Briggs, Hess & Clark, Inc.; Dr. Wayne C. Fluke, American Cyanamid Co.; Dr. Neal F. Morehouse, Dr. Salsbury's Laboratories, and Dr. A. L. Burroughs, Chas. Pfizer & Co., Inc.

Dr. Barnes said there are no vaccines available for the prevention of swellhead. Antibiotics, however, offer encouragement in the treatment of the disease. "It should be noted that the treatments are much more effective against the sinus condition than they are against the air sac form of the disease," he said.

In his discussion of blackhead disease, Dr. Morehouse said effective preventive medication is available for use during the entire life of the turkey, if needed. "While blackhead may attack turkeys of any age, good

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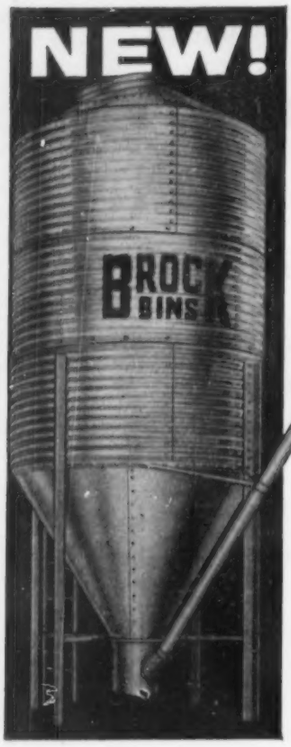
- Space-saving screw feed . . . lightweight Baughman body . . . permit greater payloads.
- Less maintenance, because there are fewer working parts.
- No spillage or carry back with SF-6's completely enclosed conveying system.
- Unloading auger cleans body completely, eliminating danger of contamination of fresh loads from old feed left in body.

Write for illustrated bulletin A-414

Service and parts from 200 service branches. Better service through better engineering.

BAUGHMAN MANUFACTURING CO.
195 SHIPMAN ROAD • JERSEYVILLE, ILL.



Brock Bulk Feed Bins Greater Convenience... Trouble-Free Service!

Quality built for best protection to feed and to increase bin life.

TWO MODELS: CENTER- OR SIDE-DRAW

■ Easy-to-reach, slanting 22° fill hole that permits filling the *entire* bin. Either blower or auger filling.

■ Weatherseal construction throughout. Heavy gauge zincgrip steel . . . the finest available. Girder-like angle iron legs with steel bracing for rigidity. All seams caulked. Bolts have Neoprene washers.

■ Large 4" auger delivers feed faster . . . 400 to 600 bushels per hour.

■ Sturdy, weatherproof boot and slide valve.

■ Side-draw model available . . . finest bulk feed bin built. Free-flowing action.

■ Sizes: Center-draw model, 3 to 7.5 tons; side-draw model, 4 to 8.5 tons.

Feed Dealers, Equipment Distributors, Feed Manufacturers, ask for literature and prices now.

BROCK MANUFACTURING, INC.
Department F-3 Milford, Indiana

FREE! **NEW 48-PAGE BOOKLET ON PERMANENT MAGNETS**

Complete product and application information tells how magnets remove iron contamination . . . prevent fires, explosions, machinery damage . . . increase product purity . . . decrease downtime.

SEND FOR YOUR COPY of this big, new comprehensive booklet that shows how Eriez magnetic equipment serves the Milling and Feed Industry.

Numerous illustrations, diagrams, actual installation photos, etc., of Eriez non-electric Magnetic Separators used to remove tramp iron and iron fines from processing lines handling feeds, fertilizers—**all types** of dry materials. Also shown are Eriez electro-permanent magnetic Vibratory Feeders and Bin Vibrators which **automatically** move and feed bulk materials at variable rates of speed; **now approved by Mill Mutual Fire Prevention Bureau, these units can result in reduced insurance premiums for the user!**

Whatever your product—and whatever your magnetic problem—you'll find the answer in this handy booklet. Write today to

ERIEZ MFG. CO.
118-QA Magnet Dr., Erie, Pa.

ERIEZ

sanitation practices and recommended management procedures usually make it unnecessary to start preventive medication before the birds are placed on range," he said.

Birds which have recovered from bluecomb remain carriers of the disease an indefinite time and are potential hazards to other turkeys. "Breaking the cycle by depopulating is the best approach once the disease is established on the premises," Dr. Knippling said.

For pullorum prevention, Dr. Briggs recommended: "Feed a ration containing 2 lb. 'nf-180' per ton of feed to starting chicks or poults for the first 2-4 weeks. Then use a 1-lb. level throughout rest of danger period."

The same prevention program was recommended for fowl typhoid and paratyphoid.

"The feeding of the 2-lb. 'nf-180'-level during the first four weeks is effective in preventing the Arizona-type paracolon in poults or chicks," Dr. Briggs commented.

Inventory on Turkey Storage Reported

CHICAGO — Inventory figures on classes of turkeys in storage on Jan. 31 have been released by the Institute of American Poultry Industries, Chicago.

The semi-annual report, said Harold M. Williams, IAPI president, was compiled from figures received from 206 warehouses (compared with 265 last year), members of the National Association of Refrigerated Warehouses, Inc.

The reporting warehouses are located in 176 cities in 37 states. An additional 39 warehouses reported no turkeys in storage (compared with 47 last year). A total of 99,791,102 lb. of turkeys in storage was reported. This does not include any turkeys held in other than public warehouses.

Of the total tonnage reported, 96,425,526 lb. were classified. The unclassified tonnage (3,365,576 lbs.) was held in eight warehouses, compared with 845,924 lbs. unclassified held in 11 warehouses in the 1958 report.

Eviscerated hen turkeys comprised 25.26% of the total classified stocks this year, compared with 11.02% a year ago. Eviscerated tom turkeys totaled 69.48%—down from 84.25% in 1958. Eviscerated broiler-fryer type turkeys were 4.7% up from 3.77% the previous year. New York dressed tom turkeys made up .48% (.94% in 1958) and New York dressed hen turkeys made up 0.08% (0.02% in 1958).

"The value of this report," said Mr. Williams, "lies in the percentage figures for the different classes of turkeys, which can be applied to U. S. Department of Agriculture total storage holdings for Jan. 31 to provide a fairly close estimate of the national holdings by classes."

Million Broilers In County Is Goal Of Texas Company

LAMESA, TEXAS — Within the next few months the Clary Poultry & Egg Co. plans to have one million broilers in Dawson County. There are several hundred thousand now, and new poultry houses are going up in several parts of the county.

"We will have 1 million broilers on the floor at one time," said Boyd Hilley, local manager. "This will mean several million to be processed in the period of one year."

The company supervises the construction of the buildings and finds the baby chicks for the producers, then furnishes all feed and medication. It also provides a constant service in the form of advice, trips to the houses and help in sanitation and management problems.

The feed is ground and mixed at the firm's electrically operated mill in Lamesa, and feed is hauled in large bulk trucks to the farms where it is augered into overhead bins.

The base of the feed is west Texas maize which is bought locally. The broilers are pushed to a 3-lb. weight when eight weeks of age, and are then picked up by company trucks and delivered to the Clary processing plant at Lubbock. From there the dressed birds are consigned to west Texas grocery stores.

Mr. Hilley said the company has investigated the California market. Since most of the California broilers come from the Southeastern states, the freight rates are 2¢ a bird higher than from Lamesa.

"We have an abundance of maize and a good, dry climate," the manager said, "so there is no reason why this shouldn't become one of the country's leading broiler centers."

At present the company has been guarantying the producers 20¢ lb. for quality birds.

Describe New Drug to Combat Shipping Fever

SACRAMENTO, CAL.—A new animal tranquilizer for eliminating stress factors in shipping fever of cattle was described at a midwinter conference of veterinarians on the Davis campus of the University of California.

Dr. P. C. Enge, extension veterinarian at the university, told the group that "spectacular" results have been obtained from SKF5354-A which has a potency five times that of a common tranquilizer now in use. He said the effects last from 18 to 25 days as compared to 3 to 5 days for other tranquilizers. In addition, Dr. Enge said, SKF5354-A leaves animals with fewer side effects.

SINCE 1906

FARMERS FRIEND

TRADE-MARK REG. U.S. PAT. OFF.

all-purpose

MINERAL FEED

an economical source of high grade and well-balanced

TRACE MINERALS

Contains important mineral elements blended with COBALT, MANGANESE, ZINC, BORON, IRON, COPPER, STABILIZED IODINE and other trace minerals in carefully calculated proportions to supply necessary mineral nutrition.

Also Contains

● **LIQUID BLACKSTRAP MOLASSES** ● **IRRADIATED YEAST** (Source of Vitamin D_2)

We Sell Thru Dealers and Jobbers Warehouses from Coast to Coast By the TON, TRUCKLOAD, or CARLOAD

Write Today Regarding Our Dealer or Jobbing Proposition

FARMERS FRIEND MINERAL CO. **NAPOLEON, OHIO**

ADVERTISING AWARDS — These three advertisements placed (top to bottom) first, second and third in the agricultural classification of the 27th National Competition of Outdoor Advertising Art, a contest sponsored by the Art Directors Club of Chicago. First place went to Chas. Pfizer & Co., Inc., second place to Remington Arms Co., and third place to Ralston Purina Co. The advertising agencies who produced the three winners were Leo Burnett Co.; Batten, Barton, Durstine & Osborn, Inc., and Gardner Advertising Co., respectively. First "Grand Award" of the contest went to Morton Salt Co.

Sunflowers for Feed On Move in Canada

LETHBRIDGE, ALBERTA — The largest acreage of sunflowers ever attempted in Canada is planned in southern Alberta, with most of the anticipated harvest to be processed into vegetable oil and meal for livestock feeding.

Western Canada Seed Processors, Ltd., has a goal of 150,000 acres under contract for the $2.7 million vegetable oil extracting plant which is to start operation in July in North Lethbridge.

Said Hugh H. Michael, company vice president, "This sunflower crop is an entirely new venture on a large scale for Alberta and could return farmers in the neighborhood of $8 million for this year's production."

Last year southern Alberta farmers raised commercial sunflowers under contract on 4,500 acres.

First Girl Student Adds 'Dainty Touch' To Elevator Course

EAST LANSING, MICH. — The gentle sex has invaded still another domain formerly reserved for men. Miss Mary Wesley will soon graduate from the Michigan State University grain elevator short course and begin operating a grain elevator on her own.

At 26, Miss Wesley had bought out her father's partner and held half share in four grain elevators in the Champaign, Ill., area. She decided she needed some specialized training, and ended up at MSU, which offers the only campus-based course in elevator operation and management.

The university had graduated 220 students from the course in 14 years. All of them were men until Miss Wesley came along.

Prof. George Greenleaf, director of the course, says Miss Wesley is "a woman of many talents. She went up to the top of the state's biggest elevator at Ottawa Lake, Mich., and is the perfect hostess at a social gathering." He said he regrets that future courses may lack the daintier touch unless another coed enrolls after March 20 when Miss Wesley completes the campus phase of the short course and goes out for on-the-job training.

Miss Wesley lists as some of her chief extra curricular interests, ballet dancing, art, skiing and riding fancy horses. She has completed two years at a finishing school and has graduated from the University of Colorado.

Feed Representatives Finish Service Course

MINNEAPOLIS—Five feed representatives recently completed the graduate farm service school sponsored in Minneapolis by Peavey Feed Mills, manufacturers of Tone Feeds.

They are: Viron Lang, Hayfield, Minn.; Louis Kulus, Flensburg, Minn.; Homer Munson, farm service director, Peavey Feed Mills; Hubert Voth, Red Wing, Minn., and Donald Cole, St. James, Minn.

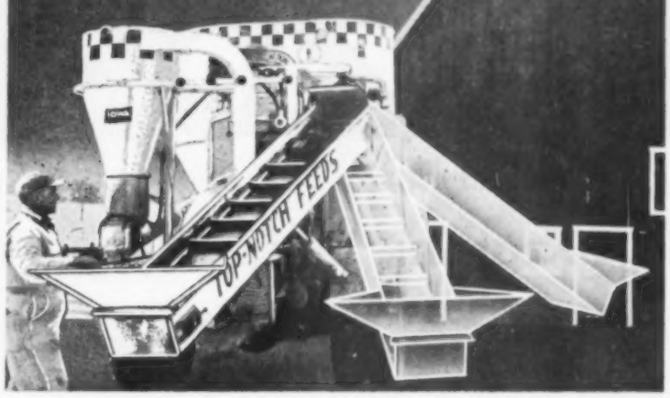
The school was the third in a series of advanced courses for feed men from the Upper Midwest states, and was attended by those who had previously completed the basic course on service training.

AFP

Specialists In All Milk By-Products

ASSOCIATED FEED PRODUCTS, inc.
1220 FLOUR EXCHANGE BLDG., MPLS. 15, MINN
FE. 6-6527

EXCLUSIVE FEEDER SWINGS 190° TO GET YOU POSITIONED AND PROCESSING UP TO 15 MINUTES SOONER



IOWA FEED-O-MATIC
mobile feed plant

You're in, out, on your way in a HURRY with an IOWA Feed-O-Matic. And, back with MORE jobs done for more PROFIT on the same fuel, labor and maintenance cost. IOWA's exclusive feeder swings 190° without extension attachment to reach grain/roughage fast — almost eliminates truck backing. IOWA's greater capacity mill plus famed IOWA 150 cu. ft., "Dual Action" mixer completely processes a ton of hog feed in 8 to 10 minutes.

And, here's added savings on fuel and maintenance. Mill and mixer are diesel powered for lowest operating cost. IOWA Feed-O-Matic is lighter-weight to save gas . . . give you surefooted treading in muddy feed lots and farm roads. IOWA's simplified design means fewer moving parts to wear and repair. And parts are standard sizes — quickly obtained from local supply sources.

MAIL THIS COUPON TODAY

IPM IOWA PORTABLE MILL CO. OELWEIN, IOWA
Please send me free literature and prices on the IOWA Feed-O-Matic mobile feed plant.

NAME_____
STREET_____
CITY_____ STATE_____

FOR THE LOWEST COST PER UNIT OF PHOSPHATE TURN TO . . .

COLUMBIA SOFT PHOSPHATE

Write for full information and prices . . .

COLUMBIA PHOSPHATE CO.
1007 Washington Ave.
St. Louis 1, Missouri

JOE BROOKS

BY AL P. NELSON

One Can Help The Other

When the noonday meeting of the Hansen's Creek Businessmen's Club was finished, Joe Brooks approached Hank Brinkman, a leading implement dealer in the area.

"Hank," he said, "mind if I walk down your way? Got something to talk over with you. It's hardly out of my way."

Tall, sharp-eyed Hank Brinkman grinned. "Sure, Joe. And if you know any good stories you might tell them to me on the way. Say, are farmers always asking you if you know any good stories?"

"Good stories?" asked Joe.

Hank laughed. "Well, you know what kind I mean."

Joe nodded. "I know. Some farmers like one kind. Some like another. They figure we see more people than they do—so we know more stories."

By this time the two men were out in the street and walking toward Brinkman's big implement dealership. The sidewalks were bare, but there was still some snow in empty lots and ice on streets on the north side of buildings or where trees lined the highway.

"How is business, Hank?" Joe asked as they walked along.

"Tough," Brinkman said. "We have to scratch harder than ever. Got to keep selling every day, gotta watch collections, too. And we have to study every dang line we got to see where we can make more sales."

Joe nodded. "And that's why you're recognized as the best implement dealer in town. You're hitting the ball all the time."

Hank laughed. "Joe, I'm plumb out of quarters today, but I've got a 12 year old account for $37.50 I can give you if you keep handing me compliments."

Joe laughed. "I've got a couple of accounts like that. Thank heavens—not very many. I have to watch collections, too."

"You're not too bad a businessman yourself," commented Hank Brinkman. "I see things. I hear things. I've noticed how you modernized your mill a couple years ago, put in new mixers and a grinder, added a pellet machine, went deeper into bulk, and put out a mobile mill unit."

Volume Up

Joe nodded. "Yes, I have, and my volume has gone up. Trouble is, I have to keep it up now—I've got heavy fixed costs."

"Oh, I suppose," Brinkman said, "but you've extended your territory. You pull in more farmers. I've noticed that. Some of those new farmers you get come over and buy farm machinery from me. I like it, Joe. I appreciate it. While I can't pay you a commission maybe I can take you and Mary out to a steak dinner. I have been considering it. Would you?"

"We sure would," Joe said. "But I owe you a steak dinner, too, on the same basis."

"How?"

"Well, your modern line of equipment pulls in new farmers, too, and some from great distances. We get feed business from some of them. So long as they come to your farm machinery place for service, they figure they might as well get their feed in the same town."

Hank Brinkman laughed. "To heck you say. Well, I'm glad to hear it. Joe, you and I do a lot for this town. We back every farm-country campaign that's reasonable. We help put over the county fair and the 4-H movement."

"That's right," Joe said. "There's only one thing we don't do. You don't sell feed and I don't sell farm equipment."

Hank Brinkman grunted. "No, we don't. If we did, that would louse things up properly, wouldn't it? We might be at each other's throats, cut prices like hell to get volume and then both of us would suffer."

Joe nodded. "Oh, we do compete a little on smaller items, Hank. You carry some farm hardware and I duplicate a few items in my farm supply store. I sell some poultry equipment and barn equipment. So do you. I handle chemicals and you do, too. But on the big lines—farm machinery and feeds—we don't."

"And I hope it stays that way, Joe," said Brinkman. "I like going trout fishing and deer hunting with you

Increased growth and reduced feed cost!

MAZOFERM®

Corn fermentation condensed solubles

MAZOFERM GIVES YOU ALL THESE BENEFITS:

- ☑ Rich source of unidentified growth factors for layer replacement chicks, broilers and poults.
- ☑ Fluid handling; minimizes storage and handling costs. Mazoferm is 50-55% solids.
- ☑ Improved palatability of poultry feeds.
- ☑ Improved pellet hardness . . . and Low Cost!

Check the results in the table below. Note how addition of Mazoferm increased growth and reduced feed cost. The savings in cost using the Mazoferm formula was $2.00 per ton!

Mazoferm Corn Fermentation Condensed Solubles, extracted from corn in the steeping process, contains water soluble unidentified chick growth factors, which are amplified by the fermentation process in Mazoferm production. Backed by the facilities of the world's largest corn refiner, you are assured of a steady, dependable supply of Mazoferm.

Write for full Mazoferm story and new 28-page brochure summarizing 3 years' work.

GROWTH AND FEED EFFICIENCY OF PULLET CHICKS (a) ON MAZOFERM (b)

NO.	RATION	INITIAL WEIGHT (GMS)	FINAL WEIGHT (7 WKS) (GMS)	AVG. FINAL WEIGHT (GMS)	TOTAL WEIGHT GAIN (7 WKS) (GMS)	AVG. TOTAL WEIGHT GAIN (GMS)	FEED EFF.	AVG. FEED EFF.	MORT.
1 (c)	NECC (d) All Mash Chick Starter Ration	41	558	558	517	517	2.84	2.86	1.9
4		41	558		517		2.88		1.9
2	NECC–2½% Fish Meal + 2½% Mazoferm (e)	41	558	570	517	528	2.90	2.90	.6
5		41	581		540		2.90		5.1
3	NECC–2½% Fish Meal–2½% Corn Meal + 5% Mazoferm	41	571	576	530	535	2.89	2.90	2.6
6		41	581		540		2.90		.6
L.S.D.						12		.07	

(a) White Leghorn layer flock replacements (b) Mazoferm corn fermentation condensed solubles (50-55% solids)
(c) 156 white Leghorn pullets per lot, floor brooded under electric hovers. Chicks started 4/7/58
(d) New England College Conference all-mash chick starter ration, 1956 (e) Total fish meal replacement. No attempt to balance protein.

MAZOFERM

CORN PRODUCTS SALES COMPANY
17 BATTERY PLACE, NEW YORK 4, N.Y.

much better than I would with a competitor."

Both men laughed, for they had some wonderful times together.

"I got to thinking," Joe said finally, "that maybe we could help each other without hurting our own businesses and without much increased expense, if any."

Hank looked puzzled. "How, Joe?"

"Well, certain farmers come to buy feed at my mill that maybe don't buy machinery from you. Now if you gave me a nice sign that I could stick up in my parking lot naming you and your farm machinery line and service, maybe some of my customers would see that sign and be reminded to get acquainted with you. Also the new customers."

Hank Brinkman looked serious, then smiled. "That would be something, Joe. I get the idea. Now maybe if I allowed you to put up a sign on my parking lot, mentioning your name and the feeds you make and sell, then you wouldn't charge me $500 a year for my sign on your lot."

"You're a mind reader, Hank. No wonder you're prospering in your business."

"But I tell you," Hank went on, "we don't want anyone to think we're amalgamated, or anything like that. Then farmers'll think we're ganging up against them. On your sign I'll put something like this, 'I'm no relative of Joe Brooks, but if you need feeds and farm supplies that I don't sell, why not drop over and talk to him?' "

Joe laughed. "Say, I like that idea. I'll put something like that on your sign on my lot."

"Good," said Brinkman. "Let's take our wives to a steak dinner on my expense account tomorrow night and talk over the details. Glad you approached me on that sign idea."

"I am, too, Hank. I feel that lots of business men can help one another this way, and at the same time promote more business without hardly any extra expense. Boost one another and we'll have a better town."

"Right," said Hank, "and since we're leaders in our respective fields, such an alliance can't hurt. But listen, if you go stickin' in a line of farm implements, the deal is off."

"And if you put in a line of feeds, the deal is off on my side," Joe grinned.

"Okay," smiled Hank. "Let that be a warning to both of us. And may each of us get lots of extra business through those signs."

"Amen," answered Joe, as he headed back to his mill.

Announces Simplified Broiler Weighing Plan

NEW YORK—Large-scale broiler operators can determine the average weight of their birds without weighing the entire flock through the use of a new system developed recently by James R. Sizemore, poultry scientist at the Loganville, Ga., experimental farm of the American Cyanamid Co.

Simplified charts showing how to apply the method are available free by writing to American Cyanamid Co., Room 6380, 30 Rockefeller Plaza, New York 20.

The system calls for weighing only a small percentage of the birds to obtain a close estimate of what all of them average individually. The method is especially advantageous to the owner of large flocks, the company reports, because the larger the number of broilers, the smaller the percentage of birds that have to be weighed.

To illustrate use of the system, a grower with 5,000 broilers would have to weigh only 5 to 7% of the birds to come within ¼ oz. of the true weight of all 5,000. To compute the average weight of 10,000 birds, only 3 to 4% of the birds would have to be weighed to achieve the same degree of accuracy. Small flock owners would have to weigh a higher percentage of birds.

Whitmoyer Company Holds Sales Meeting

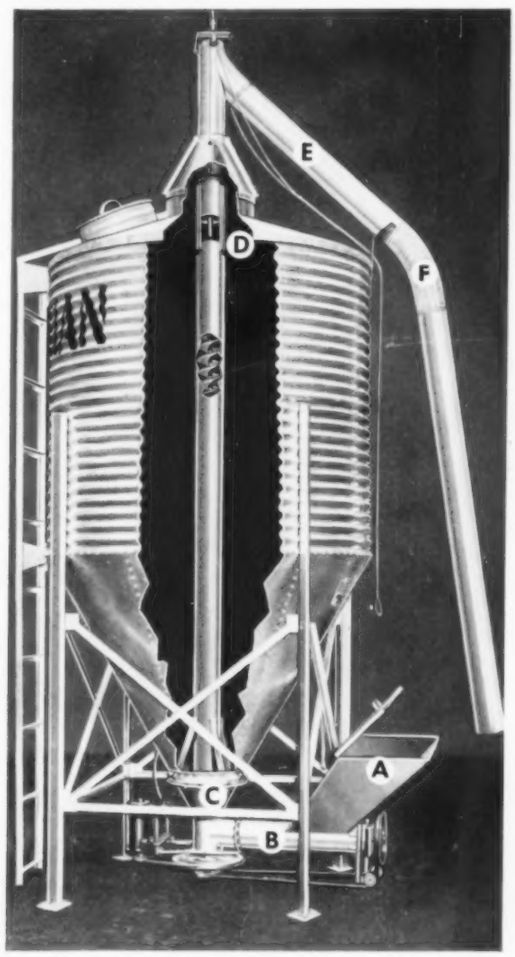
MYERSTOWN, PA.—Developments in the poultry and animal health control and nutrition field were "reviewed and previewed" at a recent sales meeting of Whitmoyer Laboratories, Inc., Myerstown.

In addition to the sales representatives of the parent company, representatives were also present from affiliated organizations — Whitmoyer Laboratories of Dixie, Inc., Whitmoyer International, Whitmoyer Laboratories, Ltd., of Canada, Grandone, Inc., and the G. & M. Sales Co.

Hank Suppan, Whitmoyer sales manager, presided over the workshop sessions. The application and marketing of Whitmoyer products in serving the farm and feed trade were discussed, with special emphasis given to the firm's Carb-O-Sep as a blackhead disease combatant.

GIVE HIM ADVICE HE'LL APPRECIATE

Remind him to order Morton T-M Salt. See page 45.



How Columbian Mix-O-Matic operates: Feeds are loaded into ground level hopper (A) and conveyed by horizontal auger (B) to base of vertical auger (C) which raises feeds to top (D) loading feed into tank. Opening (D) can be closed by simple exterior control for unloading feed from tank. In unloading, feed is raised from (C) by vertical auger into spout (E). Flexible joint (F) permits adjustment of spout for loading into truck or into feed buggy or sacks. Discharge spout may be positioned to unload at any convenient point around the tank.

Columbian Bulk Feed Storage units are available in a wide range of capacities and types to meet any bulk feed storage and handling need of miller, feed distributor, feed dealer, feeder, or rancher-farmer.

This minimum capacity (164 bu.) Columbian Mix-O-Matic created tremendous interest when first shown at the recent Midwest Feed Production School in Kansas City.

Mixes, Stores, Handles Formula Feeds in Bulk!

NEW MIX-O-MATIC Bulk Feed Tank

MASTER-CRAFTED BY COLUMBIAN SINCE 1893

The new COLUMBIAN MIX-O-MATIC BULK FEED UNITS enable millers, feed distributors and feeders to mix feeds, grains and concentrates as the storage tank is loaded; mix them within the tank, unload as needed from the tank and thus make, store and handle formula feeds. Elevated steel structure for gravity unloading into trucks is not required, nor is a boom auger-equipped truck needed to fill it.

Heart of the Mix-O-Matic, developed by Columbian research engineers, is a combination of 6-inch augers operated by a low horsepower motor. Horizontal auger at ground level allows loading the tank from any truck or from sacks; the vertical auger loads the tank, mixes as it loads, re-mixes within the tank or unloads by gravity from the top through a flexible-jointed spout into a truck, feed buggy or sacks. Mix-O-Matic can be used with any free flowing materials that can be moved or handled by a screw or auger conveyor.

Columbian Mix-O-Matic Units are available in storage capacities from 3.1 tons to 10.4 tons, depending on the height of the 6-ft. diameter tank. This new accessory can be fitted to any 6-ft. diameter center-discharge Columbian bulk feed tank. Write for complete specifications and prices.

COLUMBIAN STEEL TANK CO.

P.O. Box 4048 -X Kansas City, Mo.

Associated Member, Grain & Feed Dealers National Association. Member, American Dehydrators Association.

STEEL, Master-Crafted by Columbian . . . First for Lasting Strength

How to put real teeth in your

"MORE-EGGS-ON-LESS-FEED

Sales Claims

Make your feeds with potent Terramyc

Look at the sales story you'll have

MORE EGGS PER HEN . . .

. . . 6%-37% more . . . when colleges put hens on laying feeds containing Terramycin. Based on typical production figures* the lowest rate (6%) represents an extra $6.89 egg income for your customers with every ton of your feed—*nearly 2¢ less feed cost per dozen eggs.*

LESS FEED COST PER DOZEN

. . . 3.7% to 24% greater feed efficiency when colleges fed birds quality laying feeds containing Terramycin. Based on typical production figures, this represents an important feed saving for your customers—*about 1¢ to 6¢ per dozen eggs.*

* Based on an average of 200 eggs per hen per year (1958 poultry industry estimate). 0.28 lb. feed per bird per day (light breeds), a selling price of 35.2¢ per dozen eggs (USDA 1957 average price paid on the farm) and feed costing $90 per ton.

It worked for Mrs. Hunzeker... *it can work for you.*

"The first five months I fed with a laying feed containing Terramycin I produced a dozen eggs on just 3.9 lbs. feed and averaged $191.70 profit over feed costs* per 100 birds.

*Based on eggs @ 35¢/dozen; feed, $76/ton.

Production averaged 81.36%; never fell below 75%

Feed costs averaged only 14.8¢ per dozen; were never more than 16.18¢

Feed consumption per 100 birds averaged a low 26.4 lbs.; never went over 27 lbs.

Extra-Production Laying Feeds CONTAINING Terramycin®

BRAND OF OXYTETRACYCLINE

MRS. HUNZEKER'S WEEK-BY-WEEK RECORD

Week	Production	# feed per dozen eggs	Feed/100 birds/day
1	81.8%	3.85	26
2	84	3.8	26.6
3	83	3.83	26.4
4	83.9	3.79	26.3
5	85.5	3.71	26.2
6	83.4	3.73	26.3
7	84	3.8	26.4
8	83.4	3.78	26.4
9	82.8	3.82	26.5
10	83.1	3.8	26.5
11	81.8	3.9	26.6
12	81.6	4.00	27
13	79.9	3.9	26.4
14	80.3	3.8	26.3
15	80	3.9	26.2
16	79.8	4.00	26.4
17	79.3	3.85	25.5
18	77.14	4.26	26.6
19	77.13	4.26	26.6
20	75.5	4.22	26.5
20-week averages	81.36%	3.9 lbs.	26.4 lbs.

Pfizer

Chas. Pfizer & Co., Inc.
Science for the world's well-being

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SOLULAC

70% corn distillers solubles
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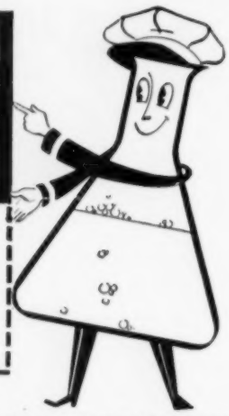

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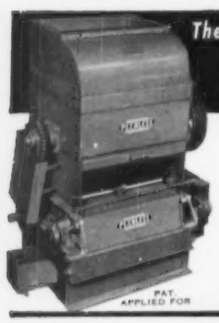

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No Field Hay Pelleter Ready by Spring, Says Illinois Ag Engineer

URBANA, ILL.—An answer to the question of how long it will be until farmers can pellet their hay in the field just as they now chop or bale it is the goal of researchers and machinery manufacturers, according to Prof. G. E. Pickard, agricultural engineer, University of Illinois. But, he adds, no one will have such a machine ready for next spring's haying season.

Prof. Pickard noted that most of the feeding trials that have interested livestock men in pelleted roughage have used small, hard pellets. He said dry and finely ground hay is needed to make such a pellet and the operation requires steam to help hold the pellet together and to lubricate the pelleting die. Another difficulty is that a large amount of power is needed to force the hay through the tiny openings. Prof. Pickard sees little chance of ever developing a field machine for this operation.

He has found that hay wafers larger than the pellets can be made with long or chopped hay containing up to 25% moisture. The wafer method, he said, eliminates the steam requirement and also the drying and grinding necessary to make steamed pellets. Prof. Pickard said he considers this method the key to compressing hay with a field machine.

Most of the farm machinery manufacturers are working on a field wafering machine, and one experimental model has been publicly displayed.

The most-needed improvements in the experimental machines, Prof. Pickard said, are a reduction in the needed amount of power and the ability to wafer hay with high moisture levels. Considering the present interest in pelleting and wafering, Prof. Pickard suggested that whoever brings out a field machine farmers can afford will find a ready market.

Researcher Outlines Dairy Feed Needs

EAST LANSING, MICH.—Michigan dairymen were told at the annual Michigan State University Farmers Week here recently that the type of grain fed to dairy cows should depend mostly on the kind and type of roughage fed.

The advice was given by Dr. C. A. Lassiter, MSU dairy researcher.

If a dairyman makes a change in his roughage program, then he may also need to make changes in the grain mixture that is to be fed. The main changes are in the protein content, Dr. Lassiter said.

When large quantities of high quality alfalfa hay as a silage are fed, a 12% protein ration will be sufficient, but if the quality is not so good, this should be increased to 14 to 16%, according to Dr. Lassiter.

Many Michigan dairymen are feeding large quantities of corn silage, he said. If less than 10 lb. of legume hay is fed daily, a mix of 16 to 20% protein is needed.

If 50 to 60 lb. of silage are fed, a 14 to 16% mixture will be satisfactory.

Cows fed a high corn silage ration may also need calcium and phosphorus supplementation, Dr. Lassiter pointed out.

Electronic Nurse Cow At Dairy Short Course

STATE COLLEGE, N. M.—About 150 New Mexico and Texas dairymen had an opportunity to inspect an electronic nurse cow at the recent New Mexico State University Dairy Short Course.

Called a "nursette," the electronic "mammie" for newborn calves mixes, warms and dispenses its own formula automatically. It actually nurses the calf as nearly like the mother cow as is mechanically possible to duplicate, according to the manufacturer. The manufacturer also claims calves will gain much faster when fed by machine than by pail feeding.

The automatic calf feeder, small and relatively simple, has a hopper which contains a water heater, space for the dry formula and electronic controls. It has a capacity of 12 cups of dry milk replacer calf food. One filling will take care of one calf for three days, or three calves for a 24-hour period, the short course attendance was told.

The nursette has been used in Midwest dairy states, and several dairymen in the Portales, N. M., area are trying out the calf feeder this year.

Cyanamid Grants Stress Growth Studies

NEW YORK—American Cyanamid Co. has announced that it is putting major emphasis on studies to improve growth efficiency and productivity in its 1959 grant-in-aid program for animal industry development.

This year, 32 grants have been awarded to agricultural college experiment stations for research studies on poultry, swine, beef cattle, dairy cows, calves, sheep and small animals. Twenty-two of the recipients also received grants from Cyanamid last year.

Covered under Cyanamid's grant program are research studies to find new and more effective means for reducing losses from animal diseases. In spite of the tremendous strides made in the past few years, infectious diseases are still costing poultry and livestock producers millions of dollars annually.

Dr. Sterling Brackett, director of animal industry development for Cyanamid, said he believes that agricultural scientists have barely scratched the surface in animal research discoveries.

Has Double Celebration

LELAND, ILL.—The date Feb. 20, 1959, was a big one for Bakers Inc., Leland hatchery and feed firm. It marked the firm's 27th anniversary and the formal opening of its new custom feed mill. The mill has facilities for grinding grain and hay, for shelling, crimping and cracking corn, for hulling and rolling oats and for pelleting complete rations. Its pelleting capacity is 12 tons an hour.

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Complete Pelleted Rations—One of the Biggest Things to Hit Cattle Feeding in Years

Quaker Oats Researcher Discusses Some of the Research and Field Developments in Making and Using Pelleted Rations for Cattle and Lambs.

By ROGER BERGLUND
Feedstuffs Managing Editor

One of the biggest things to hit the cattle feeding business in recent years has been the interest in complete pelleted rations—rations which include some or all of the roughage as well as the grain and concentrates. Some people feel this development has attracted even more interest than stilbestrol did when its use was getting started.

Pelleted feeds for fattening lambs, too, of course, are very much in the picture; in fact, the first successful complete pelleted rations were lamb feeds.

The role of the commercial feed industry in these developments is not yet entirely clear; but, most authorities agree, there is a tremendous potential here if the industry can do the job. The research and other reports on pellets, wafers or other condensed forms of feed for ruminants have stimulated the interest of thousands of feeders not yet on the new complete-ration programs.

Big Potential

Just what is the potential? Assuming the feed industry can make and deliver to feeders quality pelleted rations economically enough, the potential is tremendous.

Ralph McCall, manager of cattle feed research for the Quaker Oats Co., Chicago, points out that, in most cases, the industry is selling no more than 1/10 to 1/20 of the total ration for cattle—which leaves room for a lot of potential expansion. Furthermore, there are still many feeders using only straight protein.

Mr. McCall put it another way, too. The poultry feed business is now mighty important to the feed industry. But, think what the possibilities are when one considers that, generally, it takes 100 laying hens to equal the daily feed consumption of one steer.

In all of this, of course, there are a good many "if's," and some of those are pointed out below. But, as scientists in this field have noted, it appears that someone is going to make a lot more of these complete, or nearly complete, condensed feeds for livestock. The questions are who and how, and the answers may be coming along at an accelerating rate in the near future.

Mr. McCall has been a leader in the research on and practical application of pelleted rations for ruminants. He and the Ful-O-Pep feed division of his company are now in their seventh year of work on pelleted rations with lambs, in the fifth year with cattle. They have had pellets for lambs on the market for five years, and they have been marketing pellets for cattle for 2½ years, in the present form for about a year.

The company's pellets contain grain, other concentrates and certain additives, plus sources of roughage. As explained below, Mr. McCall recommends that at least some hay usually be fed in addition to the pellets, even though the pellets are, generally speaking, complete feeds.

Advantages Listed

In an interview on the subject of pelleted rations for beef cattle and lambs, Mr. McCall first outlined the advantages of this type of feed:

1. Labor savings are about as important to many feeders as anything. On an average about only one third as much labor is required for the feeding phase of a cattle operation. Frequently the feed supplier takes over much or all of the handling chore, keeping the feeders supplied. The most interest in pellets is shown by fair-size feeding operations, from 100 to 1,000 head of cattle, for example, where labor savings are important. The really big operators are interested, too, of course. It is expected that even among many feeders with their own grain, there will be a trend toward selling grain and purchasing complete feeds.

2. Pellets are well adapted to mechanized, large scale operations. They are almost always handled in bulk and in quantity, and generally feeders benefit from a cost standpoint.

3. Very important is the fact that every bite is a balanced mixture. There is no sorting of the feed. Also, dustiness is practically eliminated.

4. Feed conversion is improved, with the biggest improvement on high-roughage rations. Frequently there is improvement in the range of 5 to 20%, and in some cases on high-roughage feeds 25-60% or more.

5. Gains are stepped up. Increases of 5 to 20% are common. With high-roughage rations, increases of 25% and up have been noted, with the animals eating substantially more of the condensed feeds. On high-grain rations, results have ranged from 0 to 20% improvement. In some research, gains have been reduced if the pelleted ration is high in grain. This is possibly because the ration is more concentrated and the animal's appetite is satisfied more quickly.

6. Cattle and lambs go on feed more quickly and more easily, and there are fewer digestive upsets. However, this can be overdone. If one goes to a high-concentrate ration too quickly, cattle may develop rumenitis, or a callous growth on the lining of the rumen. This is one reason why Mr. McCall recommends a "starter" pellet and then a "finisher" pellet.

7. Waste is practically eliminated if there are not excessive fines in the pellets.

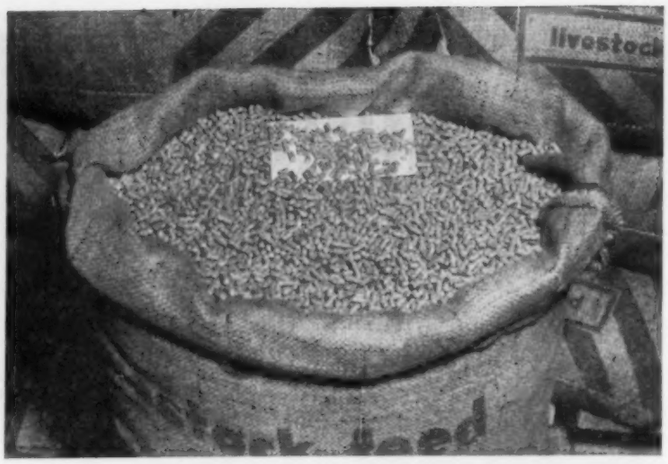
8. Pellets are particularly well adapted to self-feeding, which is gaining in popularity. Pellets seldom bridge in the self-feeder.

9. Usually there are less digestive disturbances. There are fewer ups and downs. The thorough mixing of ingredients helps here.

10. There is not a tremendous improvement in digestibility, but there is usually some. The mechanics of this are not known exactly, but the physical compaction might make the nutrients more available. There may be some gelatinization of starches. In other words, a combination of chemical and physical effects.

11. The livestock generally can be ready for market a little more quickly.

12. Cattle grade and yield as well or better than on conventional rations.



Here are some of the cattle feed pellets made at the St. Joseph, Mo., plant of The Quaker Oats Co. The pellets include sources of roughage as well as grain and other ingredients.

Some Roughage Separate

Mr. McCall said that in Quaker research, they have fed rations where all of the roughage was in the pellet and where a little was fed separately—2 to 3 lb. separately for cattle and about ½ lb. for lambs. As a rule, he noted, results are better and more sure if some roughage is fed separately.

"The animals seem to ruminate a little better; possibly they hold the pellets a little longer," he said. "In some tests with steers, gains were good but slowed the first or second month when all of the roughage was in the pellet or cube; then when some roughage was fed separately, they got back on their fast rate of gain.

"If the roughage in the pellet can be coarsened, results are usually improved, but this slows pelleting operations and increases costs. If it becomes possible to use coarser roughage and still make a good pellet or cube, we can eventually get along without extra roughage.

"Some people feed complete pellets without extra roughage, but we feel at least a small amount is advisable."

It is during the past year and in the next year or two that many feeders have had or will have their first exposure to complete pelleted rations. With an entirely new program, some feeders look for or expect troubles, but generally acceptance of the pellets has been excellent, Mr. McCall commented.

Must Hold Down Cost

While listing the various advantages of pellets, Mr. McCall also cautioned that it is vitally important to hold down the cost spread between pellets and conventional rations. The costs and charges for pelleting and distribution must be held to a minimum.

Mr. McCall feels that a dealer can sell a large volume of pelleted rations if he does an efficient, low cost job of handling and servicing.

Generally, he continued, if one can make and deliver a ration not costing more than 7 to 10¢ more per steer daily than a good conventional ration not pelleted, the feeder is money ahead. This figures out to permit about an extra $7 to $10 per ton for the pelleted ration. When one gets up in the range of an extra 15¢ per steer per day, the program is on questionable ground.

In initial development work, it is easy for the feed man to see the tremendous tonnage possibilities, but

Ralph McCall

Ralph McCall, who was interviewed to provide the information and comment in the accompanying article, is manager of cattle feed research for The Quaker Oats Co. He is an animal husbandry graduate of Montana State College and has a master's degree in animal nutrition from Washington State College. He formerly was on the faculties of Washington State, Montana State and the University of Arizona. Before joining Quaker in 1949, he also served as a ranch manager and in other capacities in the livestock industry. As manager of cattle feed research, Mr. McCall is in charge of beef cattle feed formulation and supervises cattle and sheep experiments at the company's research farm at Barrington, Ill.

Much of The Quaker Oats Co.'s research on complete pelleted rations has been carried on at the firm's Barrington, Ill., research farm. This photo shows some of the cattle feeding pens at the farm. Looking over a group of steers is Ralph McCall, manager of cattle feed research.

A bulk truck is being loaded with complete pelleted feeds at Quaker Oats' St. Joseph, Mo., plant. This is one of several Quaker mills manufacturing pellets for cattle and lambs.

over-zealous promotion of the idea will hurt the entire system. Mr. McCall said it is important to figure out just where pelleted rations can be profitably used.

He said he does not look for feeders to go over completely to pelleted rations as rapidly as some persons predict. There are still many feeders with their own grains, particularly small to medium size feeders, who will be slower to adopt the new programs. But, he added, substantial increases in use of pelleted rations are certainly to be expected.

Ful-O-Pep Programs

Ingredients in the Quaker Oats pellets include dehydrated and suncured alfalfa; oat millfeed; molasses; mixed proteins, including some animal protein as well as oilseed meal grain; antibiotics (Aureomycin); stilbestrol; minerals and trace minerals. The alfalfa and oat millfeed provide the roughage and bulkiness.

Mr. McCall went on to describe the Ful-O-Pep feeds and feeding programs. For both lambs and cattle, he noted, two rations are used—starter pellets and finisher pellets.

The Ful-O-Pep Lamb Starter has 12% protein—is bulky and fortified with minerals and antibiotic.

One of the major problems in lamb feeding is over-eating disease, or enterotoxemia, and losses may be quite high unless the lambs have been vaccinated previously for over-eating disease. With pellets, said Mr. McCall, these losses are practically eliminated, even without vaccination, because of the antibiotics and the fact that each bite is a mixture of bulky ingredients with the concentrate.

After entering the feedlot and being rested and wormed if needed, lambs are self-fed the starter. Then after about a week, the change-over to the finisher is begun. After the second week, finisher is self-fed. Extra roughage fed separately is less necessary with lambs than with cattle, but Mr. McCall says that results are usually somewhat better with extra chopped or long hay. He suggests feeding up to ½ lb. of hay all the way with the pelleted rations.

The Lamb Finisher has 10% protein, a moderate level of grain and a feeding level of antibiotic as well as stilbestrol. The fiber is not as low as in the cattle feed because lambs can handle more roughage and still produce a good finish.

There also are modifications of the above program involving mixtures of grain with the starter if the feeder has grain he wants to use; he then does not use the finisher.

The Beef Ration Starter contains 12% protein, is bulky, and has a moderate level of grain. An antibiotic is also included. The Beef Finisher Ration has 11% protein and is a high-energy fattening ration; a feeding level of Aureomycin and stilbestrol are used.

The bulkiness of the starter, Mr. McCall said, makes it possible to work up to a full feed of starter in just a few days. The yearling program calls for the cattle to be on a full feed of starter for four or five days, self-fed or hand-fed. It takes about a week to 10 days to change over to the finisher. The finisher is fed all the way to market, preferably with 3 lb. of hay per day.

Antibiotic Helps

Mr. McCall said the antibiotic usually results in improved gains, conversion, carcass quality and health. And, he added, this shows up more in the field, particularly in commercial type operations, than in some research. The responses have usually been substantial, he said, and the antibiotic and stilbestrol responses are largely additive. The antibiotic in the starter substantially eliminates the results of stress in shipping and prevents other respiratory diseases and various ailments. Also, the animals are able to utilize feed more quickly. Use of a stress feed at the start, Mr. McCall noted, can bring faster gains all the way, with or without antibiotic in the finishing ration. The carryover effects of good initial feeding are very noticeable.

Commenting on the use of oat millfeed—which comes from Quaker's oat plants—Mr. McCall said he has gained new respect for the nutritional value of this by-product. Also, he noted, heavy alfalfa feeding can cause

Cattle on test at the research farm are weighed periodically. In this photo, a steer is just coming off the scale.

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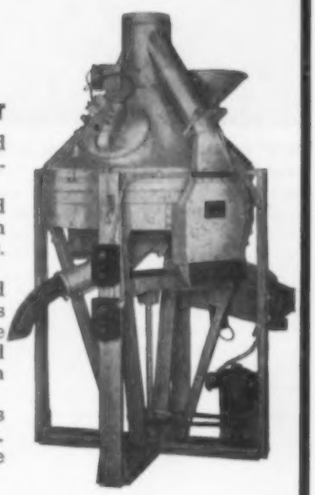

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NEW BOOK—A 16-page book with many drawings and photographs telling the story of modern feeding and management practices has been published by Wirthmore Feeds, Inc., Waltham, Mass. It will be distributed throughout the company's 17-state marketing area, according to a Wirthmore announcement. In the book the importance of adequate research, manufacturing, distribution, field service, advertising and promotion are described.

scours, and use of the oat millfeed is helpful. He pointed out, too, that using hay can be costly under certain circumstances.

The right proportion of ingredients is important, Mr. McCall continued. And the effect of a feed on the digestibility of other feeds is an important factor, he said, it's not just the digestibility of a particular ingredient that is involved.

Pointing out gains to be expected with the programs he outlined, Mr. McCall said that lambs will gain ½ lb. or more daily, compared with .4 lb. as a strong average with conventional rations.

With yearling steers fed more than 100 days and to a low choice grade, gains are up around 3 lb. daily. Usually gains are at least as good and often 5 to 10% better than on a good combination of supplement and grain. Compared with an average feedlot ration, the difference is even greater. Feed conversion is improved even more than gain.

"Basic in a pelleting program," said Mr. McCall, "is keeping processing costs down. Also, complete feeds cannot profitably be transported as far as supplements.

"The big thing is to get the feed to feeders at a reasonable cost, and it should be in bulk."

Processing

The lamb and cattle pellets supplied by Quaker Oats are ¼" except for the Beef Ration Finisher, which is a 3/16" pellet. The feeds are made on conventional pellet mills in Quaker plants in St. Joseph, Mo.; Cedar Rapids, Iowa; Sherman, Texas; Lawrenceburg, Ind., and Memphis, Tenn. In some cases, dealers affiliated with Quaker are making the pellets, too.

The size pellet used results in less fines than if larger pellets are made, Mr. McCall said. At the same time, the production rate is slowed with a bulky feed if pellets are less than ¼". The Quaker researchers have fed several different sizes and concluded that the range of 3/16 to ¼ to ⅜" adapts best to general feeding.

The rations used have pelleted very satisfactorily, Mr. McCall said. They would be classified as soft pellets. Any fines are screened out before the pellets are binned, and then, as with any pellets, the less handling from the mill bins to the feeder, the better, although no palatability problem results from some fines.

Corn makes up a sizeable part of the grain in most of the Ful-O-Pep pellets. Milo also is used in southern areas, and hominy feed may be used, too.

While roughage, particularly low-quality roughage, is benefited most from pelleting, Mr. McCall continued, it also is important to note that complete rations can probably stand the overhead better than can pelleted roughage alone.

Looking Ahead

There is no doubt, Mr. McCall said, that the trend is in the direction of complete feeds for ruminants. But, if the feed industry is to maintain or gain a place in this development, it must do the job efficiently. It must make and deliver a feed and provide the research and service needed to enable the feeder to do better than he would if he were to try to make his own ration.

Meanwhile, there are prospects for still greater improvements in ruminant feeding in the future. Along with such advances as pelleting, the industry and feeders can look for other research bringing greater improvements in gains and feed conversion, especially as more is learned about ways to stimulate bacterial activity in the still rather dark rumen.

But, whatever the developments, said Mr. McCall, it looks now as though complete pelleted rations are potentially one of the biggest things to hit cattle and lamb feeding in a good long time.

Plans Soybean Plant In South Carolina

ESTILL, S.C.—R. M. Cooper, director of the South Carolina development board, said recently the Southern Soya Corp. will soon begin construction of a $500,000 plant here.

The plant will process soybean oil for a large market area, Mr. Cooper said.

Associated in the enterprise are Stiles M. Harper and Grover F. Bowers, both of Estill, who already have in operation a 1.3-million-bushel grain elevator here.

The new plant will be located on additional land purchased by the company adjacent to the grain elevator. The group also owns grain elevators at Allendale, Sumter and Cameron.

"With the growth of soybean production in South Carolina," Mr. Cooper said, "the significance of this processing plant may be readily seen. There in only one other in the state, at Hartsville, and only one in Georgia."

About 20 persons will be employed on a permanent basis.

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The difference between analytical reagent (non-hydrated) and USP (hydrated) grades of dicalcium phosphate clearly illustrates this point.

Both have been used in the past to determine phosphorus requirements. Yet research shows there is a great difference in the availabilities of these two products for different animals. The phosphorus requirement based on the reagent grade will be much higher for both chicks and turkeys.

For example, Beltsville White Turkey poults on a purified diet receiving .55%P of analytical reagent grade of dicalcium phosphate made poor gains and suffered 100% mortality at 3 weeks. Meanwhile, poults receiving the purified diet with .55% of USP grade dicalcium phosphate made an average weight gain of 268.9 grams at 3 weeks, with 100% livability.

This work shows that feeding recommendations based on the reagent grade of dicalcium phosphate . . . and other phosphate products of low availability . . . may be much higher than actually needed.

Even more important, the proven high availability of International's Dynamic DYNAFOS, a chemically processed dicalcium phosphate, makes many old recommendations out-of-date . . . and wasteful.

Dynamic DYNAFOS meets nutritional needs with fewer pounds of product

Dynamic DYNAFOS has been developed specifically for the feed industry. Proven high biological availability and low calcium content mean you can count on each pound of Dynamic DYNAFOS to deliver much more usable phosphorus.

Exacting quality and biological control tests enable International scientists to further improve the superior performance of Dynamic DYNAFOS.

And because you need less Dynamic DYNAFOS, you actually cut formulation costs. Unique beaded form makes handling and mixing better than ever.

Write or wire your International representative for details.

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"Creators of Living Minerals"

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5-59

Dynatac Premix is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc.

New disease claim accepted for Aureomycin

New, effective, more economical way to Reduce Leptospirosis Losses

Offer your hog producer today's *most* economical way to reduce the staggering one-hundred-million-dollar-a-year loss to Leptospirosis!

Offer a feed containing AUREOMYCIN®. This wide-spectrum antibiotic aids in reducing the shedding of leptospirae in swine, the rate of abortion in pregnant sows and the mortality of new-born pigs in the presence of leptospirosis.

These are the claims you can now carry on your feed tag when your swine feed contains the recommended level of 400 grams of AUREOMYCIN Chlortetracycline per ton. Labeling must bear the information that the feed is to be administered for 14 days and its use must be discontinued 10 days before the treated animals are slaughtered.

Described on the opposite page is a program for leptospirosis control: what to do if lepto strikes; how to prevent an outbreak of lepto. This is valuable information for your customers.

Write for your *free* copies of a leaflet on AUREOMYCIN for leptospirosis for distribution to your customers. American Cyanamid Company, Agricultural Division, N. Y. 20, N. Y.

®AUREOMYCIN is American Cyanamid Company trademark for chlortetracycline.

CYANAMID
AUREOMYCIN
IN FEED

Aureomycin for all these swine diseases:

CERVICAL ABSCESSES: To reduce the incidence of cervical abscesses of swine, feed continuously 50 grams of AUREOMYCIN Chlortetracycline per ton of total ration. **BACTERIAL ENTERITIS:** As an aid in the *prevention* of swine bacterial enteritis (scours), feed continuously 50 grams of AUREOMYCIN Chlortetracycline per ton of total ration. In the *treatment* of swine bacterial enteritis, feed 100 grams of AUREOMYCIN Chlortetracycline per ton of total ration. **ATROPHIC RHINITIS:** In the maintenance of weight gains of swine in the presence of atrophic rhinitis, feed at the rate of 50 grams of AUREOMYCIN Chlortetracycline per ton of complete feed. Feed from time of weaning or when symptoms first occur until animals are marketed. **STRESS PERIODS:** In the suppression of intercurrent or secondary infections indicated above during periods of stress such as vaccination, extreme high temperatures and moving, feed 50 grams of AUREOMYCIN Chlortetracycline per ton of ration.

...and now Leptospirosis!

What to do if lepto strikes! If sows in the herd abort or farrow weak or dead pigs because of leptospirosis the American Cyanamid Company recommends that:

1. AUREOMYCIN be fed in the ration of all swine in the herd at the rate of 400 grams per ton of complete feed for 14 days. This aids in reducing the abortion rate and mortality of new-born pigs of the sows still to farrow, and aids in eliminating the carrier state of the infection from the herd.

2. All sows that have not farrowed be vaccinated with leptospirosis vaccine to protect those that have not yet contracted the disease. The vaccination procedure should follow the recommendations of a state veterinarian.

3. All sows may be kept for rebreeding. However, they should be revaccinated every six months *and* fed AUREOMYCIN at the 400-gram level at mid-gestation until no further infection is apparent.

How to prevent a lepto outbreak! It is strongly recommended that all sows be routinely blood tested before breeding to determine the presence or absence of leptospirosis in the herd. All the sows in a herd with positive reactors should be vaccinated, preferably before breeding, and AUREOMYCIN fed at the rate of 400 grams per ton of complete ration at mid-gestation. Vaccination must be repeated every six months and the treatment with AUREOMYCIN repeated each gestation period until the infection is eliminated.

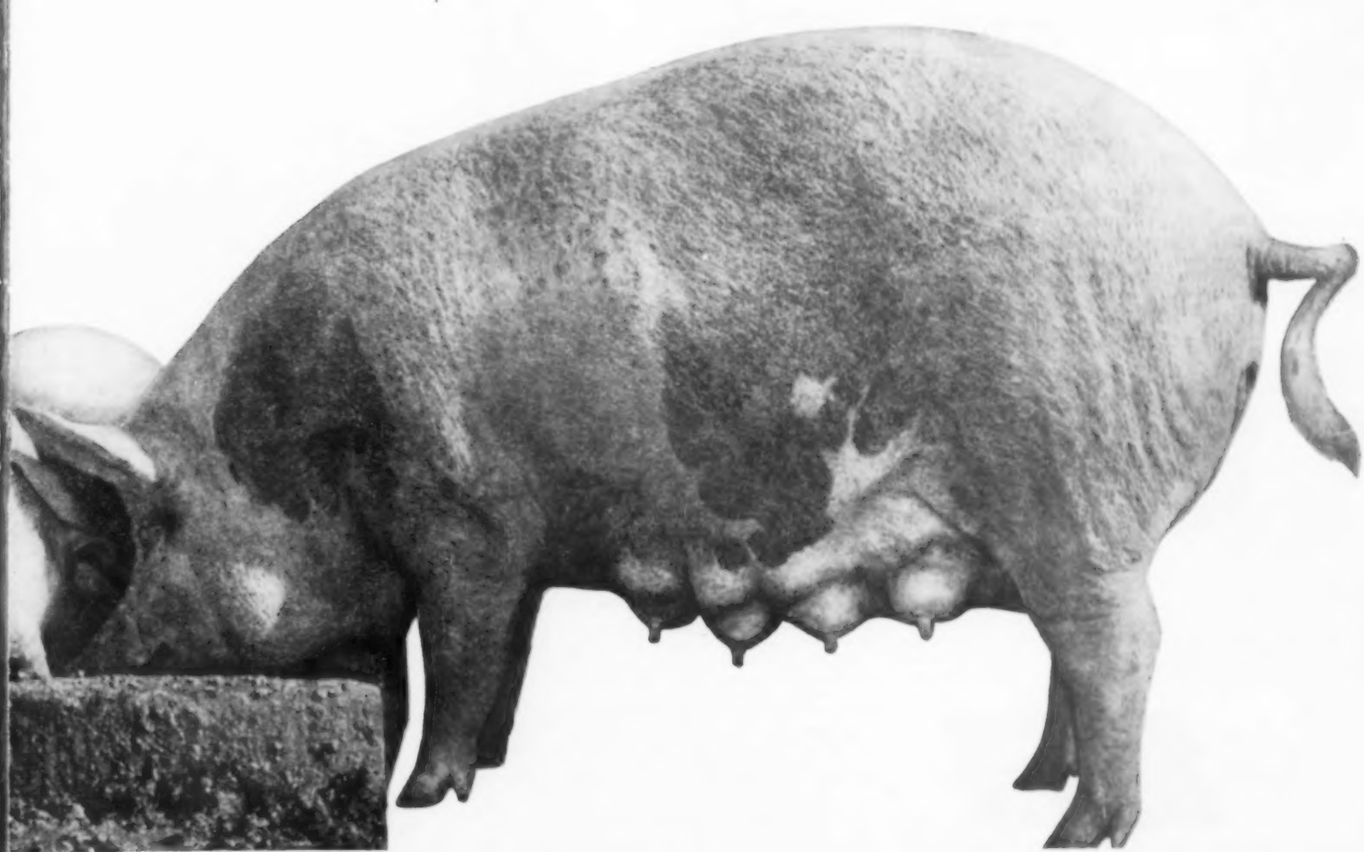
In addition to blood testing, followed by vaccination and the feeding of AUREOMYCIN when necessary, the following good management practices are essential for the control of leptospirosis:

1. Purchase replacements from leptospirosis-free herds. Before adding to the herd, isolate these animals, retest and treat with AUREOMYCIN if any test proves positive.

2. Keep different livestock separated—leptospirosis can spread from one species to another.

3. Keep stock away from streams and drain off surface water—the water may be contaminated by urine from infected animals.

4. Maintain an effective rodent control program—rodents and stray dogs can spread leptospirosis.



Pfizer Names Prizes For Retailers' Contest

NEW YORK—A week's vacation at Sun Valley, Idaho, or Acapulco, Mexico, is top prize in a contest recently launched by Chas. Pfizer & Co., Inc., New York, for retailers of animal health products.

Pfizer's agricultural division will award more than 100 prizes to retailers and their salesmen in the spring sales contest.

The top-winning retailer and his wife will have a choice of first class transportation to either the Idaho or Mexico vacationland, and $200 cash for expenses. Second and third grand prizes in the Pfizer contest are an RCA 21-in. console TV set, and an 8-mm motion picture combination that serves as both a camera and projector. In addition, 100 Westinghouse transistor radios will be awarded as regional prizes.

Judges selected for the Terramycin contest include Dr. Paul C. Olsen, management problems editor of Drug Topics; Ray Bates, editor of Hatchery and Feed, and Ray Dankenbring, associate editor of Farm Journal.

The contest, which ends March 31, is open to any retailer who purchases Terramycin Egg Formula and completes an entry explaining his method for merchandising this animal health product. Terramycin Egg Formula is a combination of antibiotic and vitamins for use in poultry drinking water.

Resolution Introduced For Integration Study

SAN FRANCISCO—The joint interim committee on agriculture and livestock problems of the two houses of the California State Legislature would "study all phases" of vertical integration, according to a resolution introduced by five assemblymen representing different agricultural areas of the state.

According to the resolution, agricultural industries, including those involving dairy, poultry and livestock products, are of "great importance" to all the people of the state, and vertical integration or contract farming has "substantially increased" throughout the industry, affecting the economic health of independent farm family operations and farmer-owned cooperatives in the state.

The resolution then requests that the joint interim committee study the problem of vertical integration or contract farming, and report to the legislature on the matter, including the making of recommendations as to needed legislation.

The resolution is in part the result of suggestions made by the California Cattlemens Assn. and other divisions of the meat industry.

At a meeting of representatives of the livestock and meat industries early in February, there was discussion on a proposal to make an economic survey of the beef and cattle industry by the Giannini Foundation, and to study the possibility of vertical integration as an increasingly important factor in the industry.

Raymond B. Colvin

VICE PRESIDENT—The election of Raymond B. Colvin, Lancaster, Pa., as vice president and director of Kinter & Grove, Inc., Dillsburg, Pa., has been announced. Mr. Colvin was formerly with Moore Farms, Inc., Lancaster. He has had experience in all phases of the hatchery business, it was announced, as well as in the feed business. Kinter & Grove, Inc., manufactures a line of feeds and has a grain drying plant and storage elevators.

Upturn in Hog Prices Expected After March

LAFAYETTE, IND.—Purdue University agricultural economists have predicted an upturn in hog prices after March. But during March, prices will average a little below mid-February levels of $15.95, they said.

The seasonal price rise should continue until June or early July, according to a report from the Purdue agricultural extension service, with the average price near $17 to $18 levels.

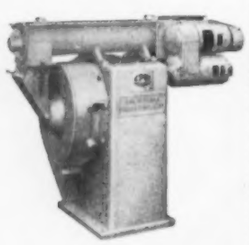
Further price declines in fed cattle prices are also in prospect for the next few weeks, the report said. Broiler prices may strengthen slightly, but will continue below the 20¢ to 22¢ levels of last year, the economists predicted. Turkey prices in late summer and fall are predicted to be about the same as last year.

The outlook for grain prices is unchanged from a month ago, and farmers should buy protein supplements on a hand-to-mouth basis for the next few weeks, according to the economists.

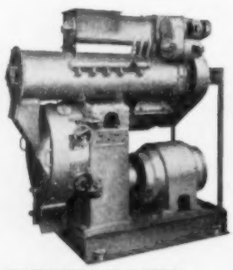
FOUND DEAD IN FEED HOPPER

OSSEO, MINN.—A 64-year-old Brooklyn Park man was found dead in a feed hopper March 2 at the Osseo Feed Mill. It was reported that Leonard Berge apparently stumbled and sank into the feed when he attempted to free some feed stuck in the 2½-ton hopper.

—also CPM Vertical and Horizontal coolers, crumblers, and other auxiliary equipment

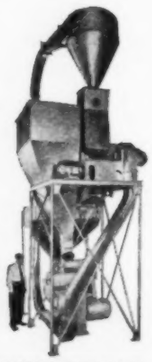


CPM MODEL "58" PELLET MILL
The California economy unit that delivers 1 or more tons per hour, all size pellets and cubes. Often used where steam not available.

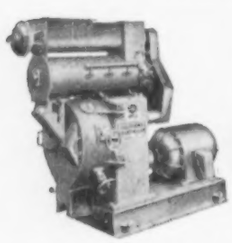


CPM "CENTURY" M. P. MIXER-PELLETER
Eliminates the need for separate molasses mixer. All CPM models can be ordered equipped with this molasses mixer at extra cost.

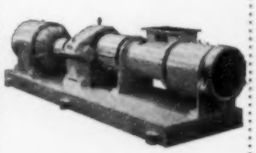
CPM "MASTER" PELLET MILL
The quality engineered pellet mill ideally suited for small capacity plants. A real profit builder long proved in service everywhere.



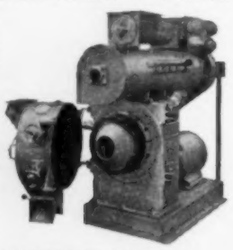
CPM "MASTER" PELLET PLANT
A compact, complete and efficient packaged pelleting plant you can install yourself. Produces quality, thoroughly cooled and screened pellets or crumbles.



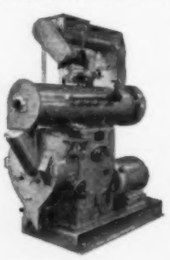
CPM "HYFLO" PELLET MILL
Handles enormous volume for its size in continuous, highly economical operation. Usually equipped with 50 HP direct coupled motor.



CPM "HI-MOLASSES" PELLET MILL
Produces a stronger, firmer, higher quality pellet from high-molasses feeds than has ever been possible before. Full information on request.



CPM "CENTURY" PELLET MILLS
Available in two models—the 75 HP and the 100 HP, each with its own die and roller matched to motor size. The standard wherever pellets are produced in huge volume.



CPM TWO-SPEED PELLET MILL
Designed for greatest efficiency in producing large cattle cubes with slow die speeds, as well as small poultry pellets at high speeds.

From helpful engineering assistance to post-installation servicing and parts, you can count on CALIFORNIA. Call your CPM representative: he's a pelleting specialist well qualified to work with you in the most economical, efficient and profitable solution to your particular needs.

CPM — CALIFORNIA PELLET MILLS

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Heavier, Better Feathered Ducks with... PROTAMONE (THYROPROTEIN)
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Dr. Salsbury's — The Scientific Approach to Poultry Health Problems

NEW

improved formula!

HISTOSTAT®-50

• GREATER ECONOMY
• GREATER CONVENIENCE

. . . and Still the Best Blackhead Preventive!

Now you can fortify your feeds with the best protection against blackhead and also get new benefits through HISTOSTAT-50. This new formulation of Histostat contains the same proven active ingredient—4-nitrophenylarsonic acid—from the chemical family of arsenicals, which are universally recognized for their growth-stimulating properties. Now, Dr. Salsbury's new, improved formula HISTOSTAT-50 permits this active ingredient to do its work more completely and effectively—especially as birds approach market age or maturity.

HISTOSTAT-50 contains 50% 4-nitrophenylarsonic acid and is used at the rate of 1 lb. per ton of turkey mash (complete ration). This permits greater feed-manufacturing convenience, outstanding economy . . . and still provides the best blackhead preventive available today!

Write, wire or phone for complete information, including Feed Manufacturers Guide 16.

Dr. SALSBURY'S Charles City Dr. S LABORATORIES Iowa

NATIONWIDE SERVICE TO THE FEED INDUSTRY

Richmond • Seattle • St. Louis • Toronto • Winnipeg. Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England

FARM MARKET FACTS

about the multi-billion dollar FARM MARKET

For a quarter of a century, Doane has been providing companies with facts to help answer questions such as these:

How will new farming methods affect the market for our product?

What product changes should we make to meet changing farming needs? Should we develop new products?

To what extent has integration developed and how will it affect our marketing program?

How does the farmer regard our company and our products compared to our competitor's?

How Doane Research Operates

To answer questions about the farm market, Doane has:

1. More than 100 agricultural college trained and experienced farm managers in 35 field offices.
2. A national panel of commercial farmers and wives, representing more than 90% of farm purchasing power.
3. Supervised testing of products under a wide range of farm conditions.
4. An experienced staff of marketing research specialists.

Doane Gives You Facts Based on Experience

Doane has a unique, down-to-earth understanding of farmers and their problems through:

- **Forty years' experience managing thousands of farms and ranches.**
- **Twenty years of furnishing facts and forecasts to American farmers in the Doane Agricultural Digest.**
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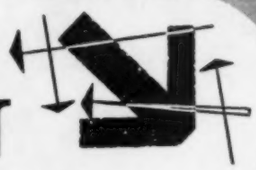
Doane Agricultural Research has proved valuable to many leading industrial firms. If you have a marketing or product testing problem, phone Elmer Denis, Manager, Research Division, FOrest 1-2800, St. Louis, Mo.

DOANE

AGRICULTURAL SERVICE, INC.

5148 Delmar Blvd. St. Louis, Mo.

UP OR DOWN



By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Texas Milo vs. Iowa Corn

Feed dealers and manufacturers have an interest in relative advantages-disadvantages of new crops. Grain sorghum, or milo as it is more commonly called in the trade, is a new crop—the product of research. The development of this crop has already brought about many changes in the agriculture of the southwest. As fewer and fewer acres are needed to grow wheat, it appears milo may well take its place.

How does milo stack up against corn? There is no precise answer to this question. However, it is interesting to compare hog-price ratios in the largest grain sorghum-growing state with the largest corn state.

After making allowances for the relatively lower feeding value of milo on a per-pound basis when fed to hogs (about 95%), we can compare the hog-milo price ratio in Texas with the hog-corn price ratio in Iowa. This does not mean that hog feeders in Texas will make money when their ratio is higher than the hog-corn ratio is in Iowa. Both might be losing money. This comparison may be had by examining Exhibit 1. Here is how we calculated the data in Exhibit 1:

First, the price of hogs in Iowa was divided by the mid-month price of corn in Iowa. This gives the hog-corn price ratio in Iowa. These are farm prices reported by the Crop Reporting Board of the U.S. Department of Agriculture. Actual prices might be a few cents different in any given locality, but they are the most reliable prices we have for this type of comparison.

You can see then that the hog-corn ratio is the number of bushels of corn that can be bought for the money received in the sale of 100 lb. of hogs. The higher the ratio, the more favorable the situation for feeding hogs.

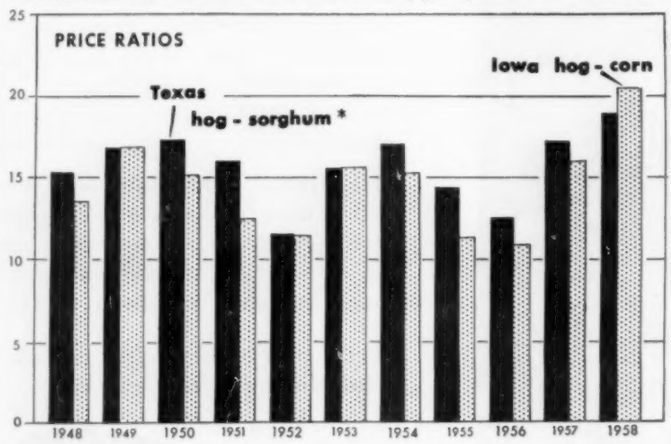
Next we figured the Texas hog-milo price ratio. Here we adjusted the milo for its relative feeding value when fed to hogs when compared to corn (approximately 95% of corn). Finally, we averaged each calendar year for Iowa and Texas.

EXHIBIT 1. Percent Texas Hog-Grain Sorghum is of Iowa Hog-Corn Price Ratio, 1948-1958*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual avg.
1948	111.7	111.9	97.3	103.1	105.6	115.6	144.1	156.8	135.7	102.6	86.5	89.4	112.6
1949	89.8	79.2	84.1	86.8	88.8	104.9	115.9	116.5	116.4	111.7	106.2	107.4	99.6
1950	103.6	100.6	100.9	102.8	107.5	127.3	137.9	136.8	149.3	145.7	108.1	133.9	113.7
1951	123.4	121.8	119.9	125.5	120.6	121.2	138.6	142.2	141.2	128.9	120.9	116.7	126.8
1952	111.8	106.4	108.3	106.5	99.8	107.3	107.5	100.3	93.4	87.3	87.9	89.4	100.2
1953	90.9	83.5	87.9	92.6	96.6	102.9	105.2	94.9	107.3	99.4	126.3	102.2	99.4
1954	97.9	98.8	98.8	95.7	99.9	130.9	137.9	129.0	128.2	120.6	107.3	113.5	111.4
1955	109.7	109.1	104.5	106.4	101.3	113.1	149.5	153.8	150.5	136.7	146.9	140.8	126.1
1956	126.6	123.3	113.4	118.1	113.8	123.6	123.5	120.2	127.1	104.1	107.3	93.9	115.4
1957	92.7	97.8	96.3	100.8	106.8	117.3	122.5	127.8	119.8	119.2	105.4	89.0	108.0
1958	74.9	73.4	76.5	90.0	90.9	100.3	107.3	108.5	107.1	105.5	89.0	100.3	92.3

*Texas hog-grain sorghum price ratio (adjusted to relative feeding values) divided by Iowa hog-corn price ratio.

EXHIBIT 2. Relation between Texas and Iowa hog-grain price ratios, 1948-1958.



Reading Exhibit 1

Here is how to read Exhibit 1: In computing the figures for each month, the Texas hog-milo ratio was divided by the Iowa hog-corn price ratio for the corresponding month. For example, in January, 1948, the relation of the Texas hog-milo ratio and the Iowa hog-corn ratio was 111.7. This means that the feed-price relationship was more favorable for feeding hogs by 11.7% than it was in Iowa.

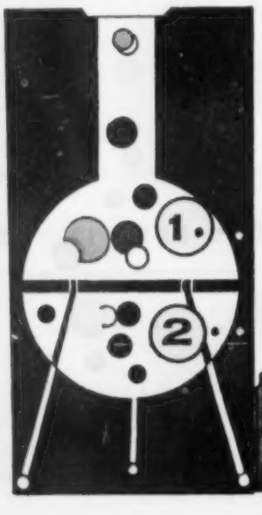
Every month with a number above 100 is a more favorable month in Texas than in Iowa. Every month where the number is less than 100, Texas is in a less favorable position. You will notice that more often than not there is a more favorable feeding conversion in Texas than in Iowa.

In taking a straight 12-month average of 11 years report, Texas enjoyed an equal or greater economic conversion in 10 of the 11 years average. We can count Texas equal to Iowa for two years in which the relationship was less than one percentage point different. How these compare is shown in Exhibit 2.

In any given time and place, the price of one feed grain is almost always as low or lower than any of the others relative to specific feeding values, and within limits imposed by the ability of the livestock being fed to utilize different grains.

Are you watching for the possibility of substituting cheaper grain? Are you making due allowance for the possible expansion of livestock finishing in the grain sorghum area?

OUR "FORMULA" . . .



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A QUALITY PRODUCT — from the cream of the soybean crop

SERVICE — from our mill to yours . . . As Scheduled!

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Here's a formula that works . . . For You!

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GRAN-I-GRIT'S NEW GRIT FEEDING PROGRAM

made Gurney Hodges 3c EXTRA per broiler without Adding One Cent to his Cost

Mr. Gurney Hodges, a top broiler producer of Low Gap, North Carolina states:

"About two years ago I was persuaded to make a test on using larger sizes of grit on 4,000 broilers and the results were amazing.

"I followed GRAN-I-GRIT'S recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until my broilers were sold at 9 weeks 5 days of age.

"The birds consumed 180 lbs. of chick and growing size grit and 450 lbs. of broiler and hen size grit. I was well pleased that feeding larger sizes of GRAN-I-GRIT made me $125.85 or over 3c per broiler more profit than the other pen tested.

"I believe that feeding the larger sizes of grit was entirely responsible for my extra profits. Since then I have used this method of feeding GRAN-I-GRIT on other flocks with equally good results."

With today's low profit margins it is EXTREMELY IMPORTANT that both Broiler Growers and Egg Producers take advantage of new methods of operation that will increase their profits without adding to their costs.

It is just as important that you as a feed manufacturer, jobber or dealer know about new methods that will increase the profits from your feed.

Daily results from GRAN-I-GRIT'S New Grit Feeding Program are proving that both Broiler Growers and Egg Producers are getting better utilization from feed and are making more money by feeding larger sizes of grit.

GRAN-I-GRIT RESEARCH FIRST PIONEERED AND PROVED that feeding Larger Sizes of Grit Would Increase Profits

The North Carolina Granite Corporation maintains an able and efficient Research Department. Because of extensive tests run by this department over a long period of time, poultry raisers are now able to make INCREASED PROFITS through feeding larger sizes of GRAN-I-GRIT.

Larger sizes of GRAN-I-GRIT not only grind feed finer and more efficiently in the gizzard, but they also keep the digestive tract open for full feed utilization by completely grinding feathers and fibrous litter that all birds eat.

Small grit that passes through the digestive tract, rather than staying and working in the gizzard, takes space needed for feed.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Get Full Details— GRAN-I-GRIT'S *New* GRIT FEEDING Program

Top poultrymen use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the best profit producing grit they can use. GRAN-I-GRIT is insoluble . . . does not dissolve and cannot change the mineral balance of your feed.

We have a new GRAN-I-GRIT circular that gives full details of the New GRAN-I-GRIT program of feeding larger sizes of grit . . . the program that is proving so successful with both Broiler Growers and Egg Producers. Write today for a free copy.

GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor and in 25, 50 and 80-lb. multiwall paper bags.

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MERCK

PROGRESS REPORT

for members of the feed industry

ENZYMES IN FATTENING CATTLE RATIONS

New era in cattle nutrition may be in sight

Ames, Iowa—March 10th

Results of the first feed lot tests with Agrozyme showed an average profit margin of $8.05 per steer over controls, it was announced at the Iowa State College Cattle Feeders' Hey Day. These results were obtained in two experiments conducted with fattening yearling steers on rations of a concentrate of silage and sound dry corn, supplemented with stilbestrol and this enzyme from Merck & Co., Inc. A level of .0075 pound of Agrozyme per head was used. Additional tests will be necessary to supplement these results.

In one 168-day trial, the feed cost per pound of gain was .8¢ less than the controls; weight gains improved an average of 11 per cent with an 8 per cent reduction in total feed consumed.

The Iowa State work further demonstrated that cattle fed a complete ration for 112 days also responded to Agrozyme. Weight gains of animals fed pellets containing Agrozyme were 14 per cent higher (on 8½ per cent less feed) that steers receiving untreated pellets alone. In the lot on Agrozyme the feed costs per pound of gain was 1.1¢ lower than the controls.

Additional tests to more fully evaluate the action of Agrozyme are currently under way at Ames and in other experiment stations and commercial feed lots. If future results confirm the work at Iowa State, enzyme-supplementation of rations for fattening cattle may prove to be a development of major significance.

What is AGROZYME

AGROZYME* is a mixture of enzymes specially formulated for the feed industry. The addition of AGROZYME to poultry rations has been shown to raise the feeding value of western barley to almost that of corn.

It now appears that the addition of this enzyme to beef cattle rations—(including those containing stilbestrol)—may improve growth, efficiency of feed conversion and reduce feed costs to a point of great commercial significance. For example, when AGROZYME was fed at the rate of .0075 pound per head per day for a 120-day feeding period, the cost of 0.9 pound of AGROZYME—the amount required for the fattening period—was approximately $1.65 per head.

This new development in beef cattle nutrition carries with it the promise of shorter, more economical fattening periods and may prove to be of tremendous importance to cattle feeders and feed lot operators everywhere.

Merck is continuing its large-scale program of enzyme research designed to develop important break-throughs in the nutrition of animals. The discovery of the value of AGROZYME in cattle fattening rations is in part a result of this program. An earlier result was the application of AGROZYME to the improvement of the nutritive value of western barley. Future progress in enzyme research will be reported to the feed industry as soon as results become available.

Stocks of AGROZYME are available and may be ordered for experimental testing. For supplies or additional information, call your Merck representative or write to: Agricultural Products, Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

*TRADEMARK OF MERCK & CO., INC. FOR ITS BRAND OF AN ENZYME SUPPLEMENT.
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MERCK & CO., INC.
Chemical Division
Rahway, New Jersey

Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Oral Administration of Estrogens and Their Effect on Growth, Feed Conversion and Carcass Quality of Growing Turkeys

● R. D. Carter, J. W. Wyne, V. D. Chamberlin and M. G. McCartney, Ohio Agricultural Experiment Station, Poultry Science, Vol. 37, No. 6, November, 1958, pp. 1284-1288.

ABSTRACT

Two trials were conducted involving a total of 720 small-type white turkey poults to evaluate the effects of oral administration of dienestrol diacetate or diethystilbestrol in the ration of turkey broilers on growth, feed conversion and carcass quality.

In trial 1 the poults were raised on a 26% protein starter with sexes separated until eight weeks of age. At this time, 10 equal pens containing 15 males and 15 females were fed a 20% protein growing ration containing 941 calories of productive energy which was continued until the termination of the experiment at 16 weeks of age. Duplicate pens within the experiment were fed according to the following plan: (1) Basal; (2) basal plus 22 mg. dienestrol diacetate per pound of feed starting at 13 weeks of age; (3) basal plus 22 mg. dienestrol diacetate per pound of feed starting at 10 weeks of age; (4) basal plus 32 mg. of dienestrol diacetate per pound of feed starting at 13 weeks of age and (5) basal plus 32 mg. of dienestrol diacetate per pound of feed starting at 10 weeks of age.

The results showed that when either 22 or 32 mg. dienestrol diacetate per pound of feed was added and fed for a period of three or six weeks prior to marketing, the weight gains of both male and female turkeys were significantly improved (at the 1% level). The best gain was shown by those birds which received 32 mg. dienestrol diacetate per pound of feed for a period of three weeks prior to marketing, while those receiving the same level for a period of six weeks had the least gain of the hormone treated groups, but still better than those fed the basal ration. There was no effect on feed conversion by the treatments or in dressing percent. Finish as indicated by fat cover in male turkeys was improved by the feeding of dienestrol diacetate, with little real difference between the various feeding levels or times of feeding, although the statistical analysis did show that birds fed the 22 mg. level for a period of either three or six weeks were the only ones showing a significant improvement in fat cover.

In the second experiment, the poults were raised to nine weeks of age under the same conditions as in the previous trial, and at this time were distributed in groups of 30, with equal sexes and a total of 14 pens. The same basal ration as previously described was fed from 9 to 12 weeks of age with the following experimental variables: (1) Basal plus 5% animal fat; (2) basal plus 32 mg. diethylstilbestrol (Stilbosol) added per pound of feed; (3) basal plus 32 mg. diethylstilbestrol plus 5% fat; (4) basal plus 16 mg. diethylstilbestrol; (5) basal plus 32 mg. dienestrol diacetate per pound; (6) basal plus 32 mg. dienestrol diacetate per pound plus 5% animal fat, and (7) basal alone. At 12 weeks of age representative samples of five males and five females were selected from each pen at random, dressed and graded for finish and degree of pinfeathering.

The results showed that the weight gains of both females and males were significantly improved by the addition of 32 mg. diethylstilbestrol per pound of ration, while birds receiving 16 mg. diethylstilbestrol per pound of ration demonstrated such improvement only in the males. The addition of the animal fat had no effect on weight gains either alone or in combination with the estrogens. Dienestrol diacetate in this trial showed no significant improvement in weight gains, although the birds were slightly heavier than the controls. Also, no differences were observed in the finish or degree of pinfeathering between the various samples of birds dressed at 12 weeks of age. It is suggested that the difference in growth response between the birds receiving dienestrol diacetate in this trial and those in trial 1

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Many field trials demonstrate that optimum growth rate and feed efficiency are maintained with low protein—high energy rations fortified with LIPAMONE.

In-the-feed LIPAMONE eliminates the extra labor and cost of implanting—as well as stresses accompanying this operation. Yet, LIPONETTES (birds fed LIPAMONE) show capon-like effects.

Combs and wattles shrink, become pale. You'll notice better bloom, fancy finish.

Uniform LIPONETTES dress out with as much as 67% less abdominal (waste) fat. They're easier to pick. Processors have fewer throwouts.

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Agricultural Division, WHITE LABORATORIES, INC., Kenilworth, N. J.

was probably due to the difference in the age of the birds at time of treatment.

COMMENT

It has been amply proven by many workers that diethylstilbestrol administered in paste or pellet form usually increases growth and improves finish of turkeys. (Among the more recent: Smyth and Vondell, 1955, and Adams, 1956). Less is known about the effects of oral stilbestrol, but Mountney et al (1957) found that when 20 mg. of diethylstilbestrol was fed per pound of ration, over-all results were improved in terms of growth and quality of turkeys in an experiment comparing the effects of diethylstilbestrol, thouracil and fat. In the Ohio work reported above, indications are that higher levels of diethylstilbestrol may give the best results in terms of gain. The results with respect to quality of birds are not in agreement with Mountney's paper, since no difference was observed.

Dienestrol diacetate has been fed previously to turkeys with variable results. For example, Miner et al (1957) found that the growth response produced by dienestrol diacetate was small and variable, although generally improving finish. In his trials (using broad breasted large whites and Beltsville small whites) the compound was added to the feed three weeks prior to slaughter starting when the birds weighed approximately 8 lb. Adams (1957) showed that dienestrol diacetate produced no favorable response on gain, and only slight improvement in finish with a depressed feed efficiency (dienestrol diacetate at 31.75 mg. per pound of ration). It should be pointed out that in this experiment the dienestrol diacetate was used with Broad Breasted Bronze turkeys and added to the ration at 22 weeks with females and either 22 or 25 weeks with males.

On the other hand, Combs et al (1957), using turkey broilers, found similar results to the present Ohio paper when 31.75 mg. dienestrol diacetate was fed per pound of ration during the period from 12 to 15 weeks of age since growth was significantly increased.

It appears, therefore, from the small amount of evidence available, that if dienestrol diacetate is used in preference to diethylstilbestrol because of ease of administration by the feed route in comparison to paste or pellets, it should be used with turkey broilers or small breed turkeys and preferably during the last three weeks of finishing period, approximately from 12 to 15 weeks of age, to promote gains and possibly improve carcass finish and lessen pinfeathering. Its use with heavy turkeys still must remain questionable.

Diethylstilbestrol by the feed route remains an interesting speculation, but is as yet largely untried and unapproved. Diethylstilbestrol paste or pellets appear superior to liquid or oil solutions (Adams, 1957).

Diethylstilbestrol probably has little value orally in chickens because of its low estrogenic activity for this species and because extremely large doses are required to promote a growth response or fattening effect.

Timely and Worth Noting

One of the fastest ways of increasing one's knowledge on a particular subject is to read good, carefully written review articles published in various scientific journals. One of the best of this type seen recently on a very difficult subject is entitled, "Effect of Soil Fertility Upon the Yield and Nutritive Value of Forages," by George M. Ward of Kansas State College and appearing in the current Journal of Dairy Science (February, 1959, pp. 277-289, Vol. 42, No. 2).

This is not a long paper and some may criticize it for not being so, but the primary purpose of a review article is to bring together what is known about the subject, form an opinion based on such information and outline areas for further discussion and investigation. This the author has done, briefly and admirably! There is also a very interesting chart on page 278 which could form the basis for meetings for feed dealers and their customers.

USDA Seeks Grain Warehouse Examiners

WASHINGTON—The U.S. Department of Agriculture has announced that it needs men familiar with operation of grain warehouses to fill positions as grain warehouse examiners.

Three years' experience as manager of a grain warehouse or elevator, or a college degree in agriculture, is required for the starting salary of $4,040 per year. A man with an additional year of experience could qualify for a starting salary of $4,980.

Omaha would be headquarters, with about 75% of the time in travel, visiting midwestern warehouses licensed under the Federal Warehouse Act.

Abbott Sales Up 5%

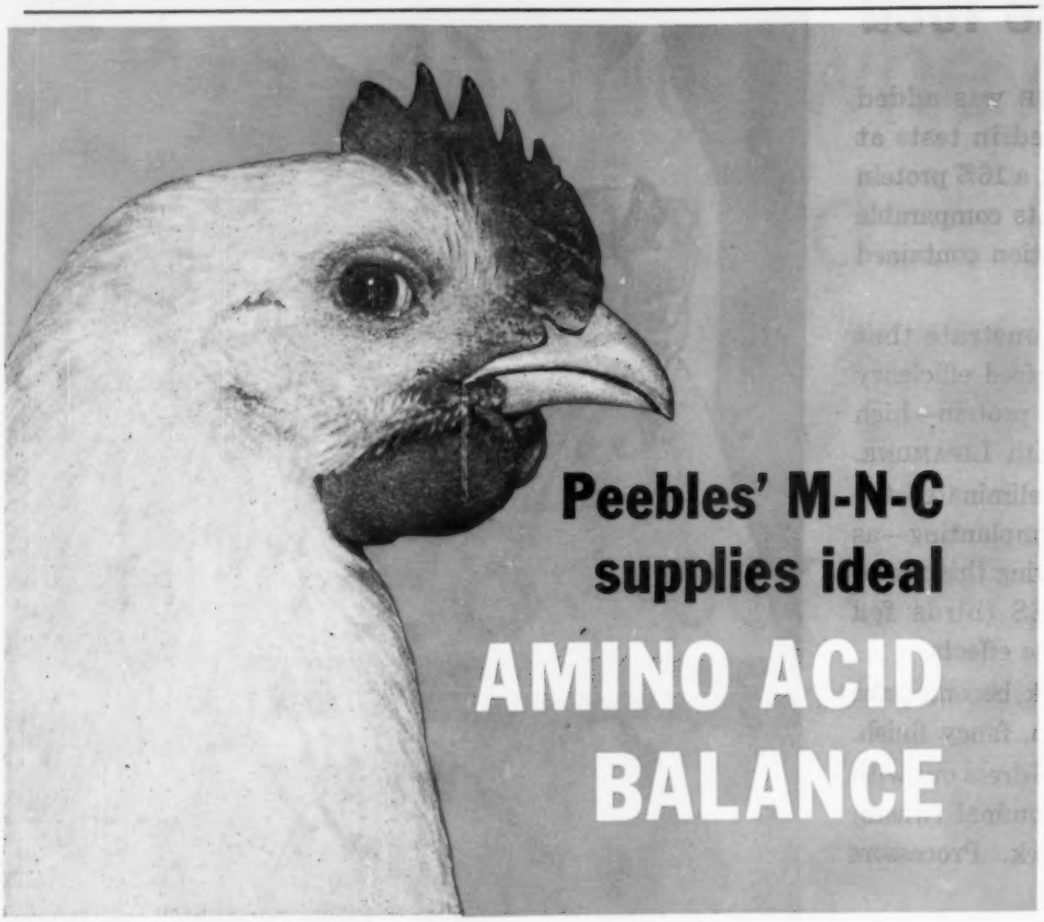
NORTH CHICAGO, ILL.—Abbott Laboratories' sales and earnings in 1958 were highest in the company's history, announced George R. Cain, president and general manager. Sales increased 5% over 1957 to a new high of $116,598,000, and earnings rose to $12,873,000, equivalent to $3.32 per common share.

The company's consolidated domestic and foreign sales for 1957 were $111,271,000. Earnings in 1957 totaled $12,681,000, equivalent to $3.30 a share.

Capital expenditures also reached a record high, totaling $8,533,000 in 1958, compared to $7,881,000 in the previous year.

TRANSFERRED TO ATHENS, GA.

TIFTON, GA.—Milton Y. Dendy, extension service poultry specialist who has been stationed in Tifton for the past 16 months, has been transferred to extension offices in Athens, Ga.



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In addition, M-N-C is concentrated to give you, pound for pound, 50% more non-lactose nutrients. Just 2% M-N-C supplies the same amount of Whey factor and other growth-promoting elements as 3% whole dried whey.

Peebles' exclusive spray-dried process assures uniform high quality. M-N-C's smooth, even texture provides uniform color and even distribution in mixed feeds.

Find out how M-N-C can answer your amino acid requirements and give your feeds added nutritional value. Write or wire today for complete information.

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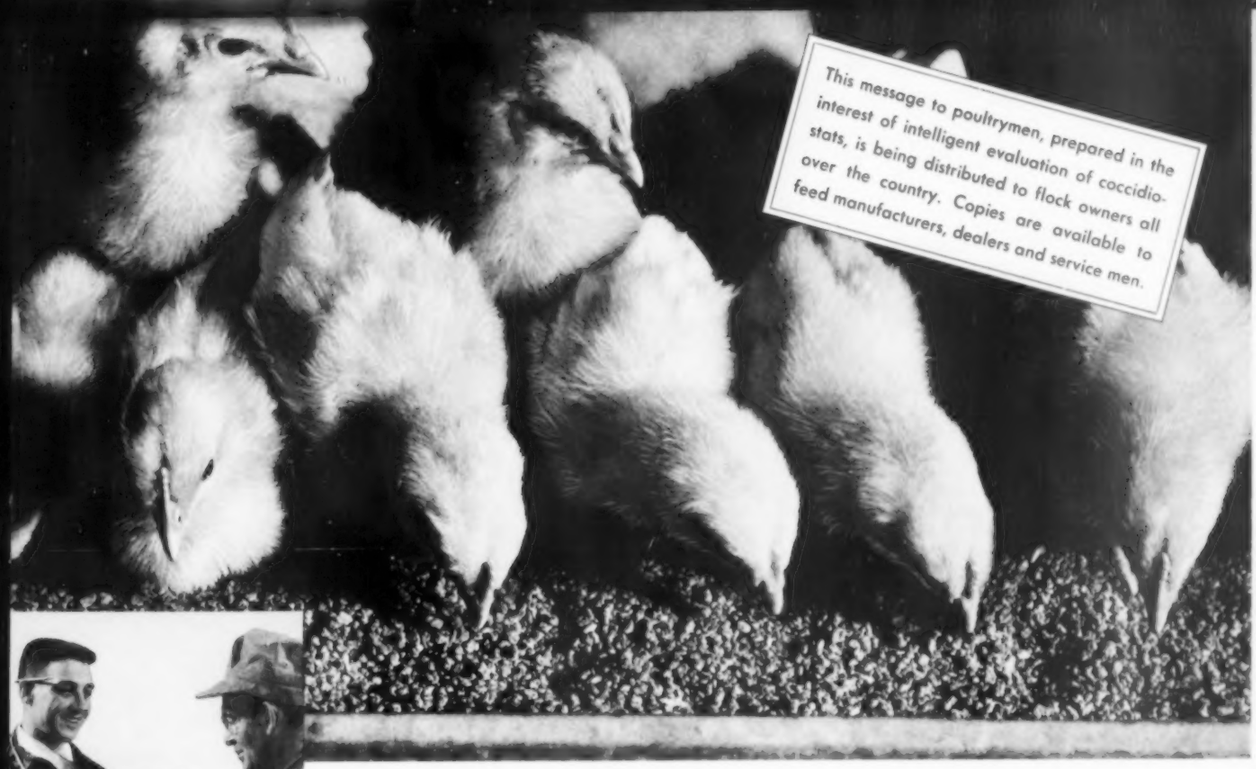

This message to poultrymen, prepared in the interest of intelligent evaluation of coccidiostats, is being distributed to flock owners all over the country. Copies are available to feed manufacturers, dealers and service men.

How to give future layers
lifetime protection against coccidiosis

Your most important job in a layer operation is to have your pullet flock protected against coccidiosis by housing time. You can't afford to risk anything less . . . especially when safe, dependable lifetime protection *is* possible.

The time to start building lifetime protection is when you choose a chick starter. It should be *medicated*, and if it contains the right drug, you can start right there to build immunity in your birds. And *immunity* is the only answer. Otherwise, the coccidiosis parasites which always are on hand even in the best managed flocks will reinfect your birds.

Birds can build immunity in only one way . . . through natural exposure to the coccidial organisms that threaten them. By controlling their infection with the right kind of feed medication, you give birds a chance to build their own immunity which will protect them for life.

No mystery to coccidiosis control

It's a simple matter of good management and the proper use of a medicated feed. For more than eight years, the nitrofuran drugs, nitrofurazone and furazolidone have successfully contributed to the reduction of losses from coccidiosis. Coupled with good management practices these drugs in quality feeds have helped poultrymen know where they stand, helped relieve them of the constant fear of a costly outbreak.

bīfuran the best answer

One drug specially formulated to do this very job is *bifuran*, a combination of the lifesaving nitrofurans, nitrofurazone and furazolidone. Poultrymen who have used *bīfuran* believe in it . . . depend on it. bifuran:

1. *Helps birds develop lifetime immunity to coccidiosis (a basic requirement for profitable egg production.)*
2. *Assists in controlling many secondary infections. (No coccidiostat other than one containing nitrofurans offers this added advantage.)*
3. *Has no harmful side effects . . . and improves feed conversion.*

The proper use of *bifuran* can best be demonstrated by taking a new look at the whole problem of coccidiosis — what it is, how it develops, and how immunity is built.

For this information turn the page . . . . . .

8 Basic facts you should know

1 WHAT IS COCCIDIOSIS?

Coccidiosis affects many wild and domestic animals. It is especially serious in chickens and is found wherever chickens are raised. The disease is caused by parasites which attack and destroy the linings of intestines. It is transmitted from chicken to chicken through contamination of litter by a microscopic egg-shaped body called an oocyst. Oocysts are so small that 1,000 of them placed end to end would measure only an inch.

2 THE LIFE CYCLE OF COCCIDIOSIS

The complete life cycle of coccidia takes about ten days and progresses like this:

Step one (0 hours) — Mature, ripe oocyst containing 8 one-cell parasites is in litter.

Step two (0 hours) — Chicken picks up oocyst from litter. Oocyst is deposited and hatches in intestinal tract.

Step three (5 to 6 days) — Within a week each oocyst produces up to a million parasites... destructive hordes which invade the inner tissue of intestinal walls. Bleeding of varying degrees results. The more oocysts picked up by a chicken, the greater the damage.

Step four (7 days) — The cycle is repeated when the reproductive phase begins. Some of the parasites develop a different, larger, immovable form and a movable worm-like form which fertilizes the larger body. The two fuse into one to form the fertilized egg (oocyst) capable of beginning future cycles.

Step five (8 days) — Chicken eliminates new fertilized oocysts from intestinal tract, dropping them into litter.

Step six (10 to 12 days) — Under best moisture and temperature conditions, this free, living oocyst "ripens" for 48 hours, until it contains 8 one-cell parasites ready to reinfect. When picked up by a chicken, the infection cycle starts again.

3 HOW OUTBREAKS DEVELOP

Even when baby chicks are placed into a freshly cleaned brooder house, it is not long before a few oocysts have gained entrance and begin infecting the flock. By the end of three weeks a few chicks will have eaten small quantities of oocysts. Some growth retardation may be visible.

By the fourth and fifth weeks the litter in the house will be contaminated with millions of oocysts. Chicks will be heavily infected. Birds are visibly ill and blood in the droppings may appear. Death losses can run up to half the flock.

4 THREE KINDS ARE MOST SERIOUS

There are at least 8 kinds of coccidia. But 3 are usually the chief cause of economic losses in chickens. These are: *E. tennella* . . . which causes cecal or bloody coccidiosis. It strikes so swiftly that birds often die in a few minutes after showing symptoms. Chicks bleed to death internally.

E. necatrix . . . causes intestinal coccidiosis. It usually appears later than the cecal variety. Affected birds pass black blood or only white watery fluid and orange-colored mucous. Birds lose weight, go off feed and water.

E. acervulina . . . usually shows up in adult birds as a chronic infection. No blood is passed because the parasites do not penetrate deeply into the intestinal wall. Production drops, birds lose weight and often become culls.

about modern coccidiosis control

5 HOW IMMUNITY DEVELOPS

Birds can build immunity in only one way . . . through natural exposure to the particular species of coccidial organism. This infection, if controlled with the right kind of feed medication, gives birds a chance to develop their own immunity which will protect them for life. The whole process is somewhat similar to vaccination and "shots" for humans. With coccidiosis, the drug used must allow enough infection to permit the immunity-building process . . . but must hold down the severity to prevent losses and stunting. Without this immunity, the ever-present coccidiosis parasites will reinfect susceptible birds.

6 THE TRUTH ABOUT IMMUNITY

USDA scientists have said it in one sentence: "The best way to control coccidiosis of poultry is to prevent severe infections, and the best way to do that is to develop resistance to the disease." The only way to develop this resistance or immunity is through a controlled mild infection.

A common misconception is that a drug *alone* can give "complete protection against coccidiosis losses." The fact is a drug can be *too* powerful in its action, literally halting the multiplication of the coccidial parasites. The result is that birds do not develop a satisfactory immunity because they never experience *even* a mild infection.

The only answer — today as always — is immunity through controlled mild infection.

7 SYMPTOMS ARE A GOOD SIGN

Frankly, many poultrymen . . . and feed dealers, too . . . become alarmed when coccidiosis symptoms appear during use of an immunity-aiding drug. But in this case, symptoms are actually a good sign. They show that birds are going through the mild infection which they must have before it's possible to build immunity. The critical factor, of course, is the use of the right drug. It *must permit* the ideal level of coccidiosis infection.

Failure to see some slight symptoms may actually be a bad sign. It means either that there has been no exposure to coccidiosis, hence no opportunity for immunity to develop; or that the drug is too strong to allow these desirable signals that immunity is being built.

8 HOW *BIFURAN* HELPS BUILD IMMUNITY

bifuran protects pullets against coccidiosis losses while they build their own immunity. First, *bifuran* holds down multiplication of the coccidia to about ¼ normal . . . second, it effectively reduces the "infecting" strength of surviving coccidia. The resulting controlled, mild infection is sufficient to stimulate the birds' natural body defenses to build immunity.

But birds must become immune to each of the dangerous species. Since these species cause their particular kind of coccidiosis at different periods in the birds lifetime, it is important to continuously provide *bifuran* medicated feed from day old to about 15 weeks of age.

A GUIDE FOR EVALUATING COCCIDIOSTATS

DRUG SHOULD DO THIS . . .	EXPLANATION	bifuran	DRUG A	DRUG B
Protect against the important coccidiosis species	E. tenella, E. necatrix are most serious. (E. acervulina and E. maxima are of lesser importance.)	Good	Very Good	Fair
Control outbreaks and stunting	Uncontrolled infections lead to death losses, feed waste and underdeveloped layers.	Good	Good	Poor
Allow development of immunity (upon adequate exposure)	Pullets gaining immunity before housing become full-time, profitable producers. Outbreaks in laying house result in costly death and production losses. (Too harsh a drug undependable in permitting immunity.)	Very Good	Poor	Poor to Fair
Maintain feed conversion and growth	Reduced feed cost in growing pullets to production age important.	Good	Fair	Good
Safe and non-toxic at recommended levels	Important to have a margin of safety to protect against accidental overdosage and contamination of other feeds.	Good	Poor	Doubtful
No tissue build-up	Can safely and legally be fed right up to marketing.	Yes	No	No
Safe for layers	No adverse effects on egg quality, color, fertility, shell texture and production even if fed to laying hens.	Very Good	No	Doubtful
Protect against secondary infection	Protection against secondary bacterial invaders at no extra cost is an important bonus benefit.	Good	No	No
No resistance build-up	No tendency to allow build-up of drug-resistant strains of coccidia.	Good	Poor	Poor
Economical	Cost 1¢ or less per bird.	OK	OK	OK

Compare overall coccidiostat performance See why it will pay you to use bifuran

As you well know there are a number of different coccidiostats. Their differences are sometimes minor, but the most important difference is whether they allow birds to develop *lasting immunity*. Nor is stand-out performance in one or two characteristics a safe measure of value. It's *overall* performance in your flock that really counts.

In the chart above, we have rated *bifuran* against the other two most widely used coccidiostats. This rating is based on the published information on each drug together with their widely recognized reputations in the field.

If you carefully evaluate this chart, we think you will agree that bifuran shows the strongest record of across-the-board performance — of long term dependability. bifuran's reputation is unmarred by complaints of non-immunity and resistant coccidia strains.

If *bifuran* looks like it will do more for you, isn't it just good common sense to give it a trial? Then decide for yourself. See your feed dealer or write Feed Products Manager, Hess and Clark for information on how to get *bifuran* in your feeds. Find out why so many poultrymen have used *bifuran* successfully and enjoy its dependable performance and bonus benefits.

bifuran

appears on feed tags as .0055% nitrofurazone, .0008% furazolidone.

HESS & CLARK
ASHLAND, OHIO
Division of Vick Chemical Company

YT-9-1

Makers of nf-180 for improved egg production efficiency

Feeding Vitamin D Reduces Milk Fever, Maine Trials Show

ORONO, MAINE — High levels of vitamin D fed several days before calving can markedly reduce the occurrence of milk fever, according to a report in a recent issue of Maine Farm Research, publication of the Maine Agricultural Experiment Station here.

Dr. B. R. Poulton, head of the University of Maine department of animal science, and J. C. Dell, graduate assistant, reported this conclusion on the basis of tests with 32 herds of Jersey cattle in Maine.

Approximately 500 cows were used in the study. Only cows calving for the third time or more were used since it has been found that milk fever seldom strikes cows calving with a first or second calf, the researchers said.

For their preliminary studies, the researchers said they used a technique which had been reported by Dr. J. W. Hibbs and W. E. Pounden of the Ohio Experiment Station. The Ohio researchers had reported success in reducing the incidence of milk fever by feeding irradiated yeast at the daily rate of 30 million USP units of vitamin D equivalent beginning approximately three to eight days before the expected date of calving.

"We encountered several difficulties in using this technique," the Maine researchers said. "Many cows refused the grain to which the irradiated yeast had been added, and considerable difficulty was met in using the expected calving dates as a basis for beginning the preventive feeding program."

They initiated a study to determine the effectiveness of a program using high-potency irradiated ergosterol as a source of vitamin D and relying on the physical changes that occur two or three days prior to calving as a basis for beginning the preventive feeding program.

Cows in the test were grouped as follows: Group 1, cows that had previously had milk fever and were to receive the vitamin D feeding program; group 2, cows that had had milk fever and were to serve as controls; group 3, cows without previous history of milk fever and receiving the vitamin D; group 4, controls without a history of milk fever.

The vitamin D was mixed with the cows' daily grain ration. The feed for each day and each cow was sealed into paper bags and labeled, and preventive feeding was begun two or three days before expected calving whenever possible and continued for two days after calving.

The researchers said their results show that regardless of whether the cows had a previous history of milk fever, the daily feeding of 30 million USP units of vitamin D for several days before calving reduced the occurrence of milk fever in dairy cattle by about two thirds. The preventive feeding reduced the occurrence of milk fever from 61.3 to 23.1% for cows with previous histories and from 22.6 to 6.4% among cows without previous history of the disease.

It was also pointed out by the researchers that cows receiving the preventive feeding for 2 to 2½ days before calving had the lowest percentage incidence of milk fever. One group of 53 cows without previous histories received 2 to 2½ days of treatment and calved without a single case of milk fever.

Feeding the vitamin D for longer periods of time was not as effective as the 2 to 2½ day treatment, they said. This suggests that prolonged intake of vitamin D before calving adversely affects the cow's natural ability to resist milk fever.

The researchers said they are continuing to study the program and are seeking to make refinements in it.

Specialist Predicts Fat Lambs in 4 Months

MADISON, WIS.—Lambs could be fattened and ready for market four months after birth by using pelleted feeds, according to Dr. Arthur L. Pope, sheep specialist, University of Wisconsin.

Dr. Pope said that at four months the heaviest of four groups of lambs used in pelleted feed tests averaged 104 lb. and the lightest group averaged 88 lb. All of the lambs graded choice.

The lambs were permitted to eat the feed pellets from a creep at the earliest possible time. With corn, alfalfa leaf meal, soybean oil meal, bone meal and trace mineralized salt for the basic ration, the pellets also contained added antibiotics (to prevent overeating disease) and vitamins.

"These pellets are the coming thing," Dr. Pope asserted. "In 10 years you won't see such a thing as baled hay as far as lamb feeding is concerned."

PACIFIC N.W. MAY GROW MORE SOYBEANS

CORVALLIS, ORE. — The Pacific Northwest will produce more feed grains and protein supplements in the future, particularly soybeans, it was predicted in a report from Oregon State College. "Field trials on Pacific Northwest irrigated lands are giving 40 bu. of soybeans per acre, compared to 30 bu., considered a good yield in the midwest," it was noted in the report. "Costs of shipping soybean meal from the Midwest to Portland is presently about $30 a ton, emphasizing the potential for Oregon farmers."

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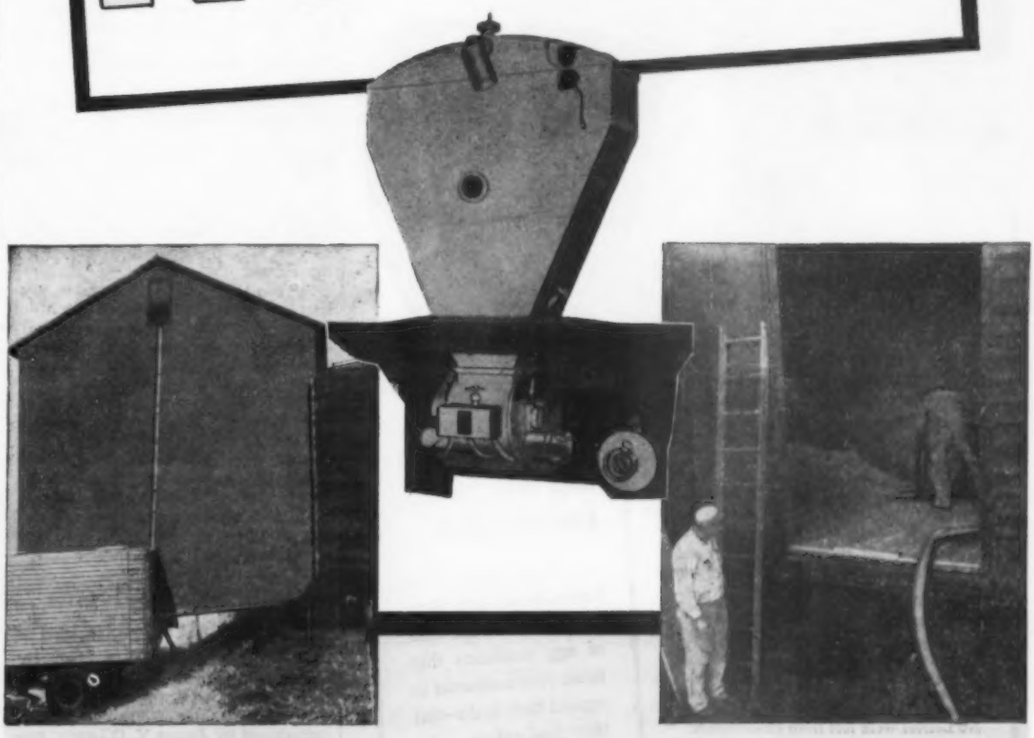

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$5.04

PROFIT* per layer in Wisconsin Random Sample Test.

Babcock Bessies are bred to make money for you. They proved it in Wisconsin Random Sample Test with outstanding performances in all these factors:

TOPS FOR INCOME Their $5.04* over feed and chick cost per pullet housed was $.42 higher than the second place entry . . . and $.75 higher than the third place entry . . . and $1.69 higher than the average for all pens in the test.

BEST LIVABILITY Bessies showed 98% livability — highest in the test, where average was 80%. Birds were not debeaked in this test. As a result, some pens lost several birds by cannibalism. No Bessies were lost from cannibalism.

MOST MARKETABLE EGGS Bessies had 97.4% marketable eggs — the highest total in the test. Also 79% of their total production were large and extra large eggs. Remember . . . it's the high quality eggs you get to market that determine your egg profits.

Get a layer that combines all these profit factors . . . high production for 12-15 months, large white eggs, excellent livability, and good feed efficiency.

*Profit over chick and feed cost. Does not include labor, housing, etc.

NEW IMPROVEMENTS BRED INTO BABCOCK BESSIES

. . . have made them better money-hens than ever. They are the kind of egg producers that cause your customers to expand their flocks—*and their feed orders.*

Babcock Bessies are Available World-Wide from Nearby Bessie Franchised Hatcheries.

Ask for the NEW Bessie Catalog

BABCOCK POULTRY FARM, INC.
Box 286-C Ithaca, N. Y.

BABCOCK HEALTHY Chicks

Program Announced For Annual Egg Day At Purdue April 8

LAFAYETTE, IND.—The tentative program for the seventh annual Purdue Egg Day, April 8, has been announced by the co-chairmen, D. D. Jackson, Purdue extension poultryman, and Harry Truax, president, Indiana State Egg Board. Talks, discussions and meetings are scheduled for Purdue Memorial Center, Fowler Hall.

Lined up for the morning program are the following items:

"Management Systems for Layers," J. W. Sicer, Purdue extension poultryman; "New Ways to Use Eggs to Increase Consumption," Maylon C. Sweet, editor, Processing and Marketing, Mt. Morris, Ill.; panel, "Egging on the Egg Council Program," moderator, Dr. J. Holmes Martin, head, Purdue poultry science department.

The afternoon program has been tentatively scheduled as follows:

"Automation in the Egg Industry," Harry E. Drews, poultry products consultant, Springfield, Mo.; short business meeting of egg council to elect officers; Purdue research progress reports—breeding, B. B. Bohren; diseases, Dr. H. E. Moses; nutrition, Richard L. Adams; products, Dr. W. J. Stadelman; "The Laying Flock—How Big Should It Be?" Dr. R. L. Kohls, Purdue agricultural economist; "Outlook for Hoosier Eggs in 1959," R. D. Darley, Purdue extension economist.

Protein Plant Sources Covered in New Book

NEW ORLEANS — Complete and current information on the plant sources of protein is made available in "Processed Plant Protein Foodstuffs," a new book edited by Aaron M. Altschul, U.S. Department of Agriculture, New Orleans, and published by Academic Press, Inc., New York.

All major plant protein concentrates are reviewed in the book by experts from industry, agricultural colleges and government agencies. Each commodity is presented from the viewpoints of economies and areas of growth, composition of seed, processing and properties of the meal, uses as a feedstuff and prospects for the future.

Soybean oil meal and soybean protein are given considerable attention in the book. Other commodities treated include: Gossypol in cottonseed, linseed oil meal, peanut meal, sesame meal and safflower meal.

The book is written in two parts. The first is a general discussion of the plant proteins and their use. The second part offers information regarding principles and best practice of using plant proteins.

An appendix is a review of national food supplies by United Nations staff members.

Commercial Solvents Name District Manager

NEW YORK—James F. McCarthy has been named manager of the Cleveland district office for Commercial Solvents Corp., New York, it was announced by James V. O'Leary, general sales manager. Mr. McCarthy joined CSC in 1953 as an industrial chemicals salesman and has served in Chicago and Indianapolis.

The Cleveland district office is the sales center for CSC industrial, agricultural and automotive chemicals, and animal nutrition products in an area covering northern Ohio, West Virginia, western Pennsylvania and the Buffalo, N.Y., section.

FEED FIRM BURNS

RICHMOND, MO. — Fire recently destroyed the Ray-Carroll County Grain Growers Cooperative feed store and lumber yard. Losses were estimated at $150,000.

Drylot vs. Forage In Tests on Lambs

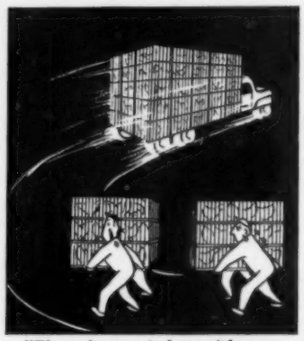
CLEMSON, S.C.—Results of two years' work at the Clemson College Sheep Experiment Station, Wellman division, Johnsonville, indicate that feeder lambs fattened in drylot gain faster, grade higher and sell higher than do those fed grain while on forage—but the tests showed that it costs less to produce a pound of gain on forage.

Dr. W. C. Godley, professor of animal husbandry, and C. H. Mudge, superintendent, Coast Experiment Station, Summerville, reported that eight different drylot and forage grain treatments were included in the tests and there were approximately 60 lambs in each treatment.

Aeration Firm Lists Recent Installations

BOONE, IOWA — The steadily-increasing interest in grain aeration systems was indicated in a report of recent installations by Rolfes Grain Aeration Companies, Boone. The list shows 14 installations in seven states.

Four of the installations were made in Iowa, four in Kansas, two in Texas and one in Illinois, Nebraska, North Dakota and North Carolina.



"They always wind up with more than they expect in these DPL vaccinated flocks."

More and more poultrymen bring larger flocks to market thanks to the protection of safe and reliable DPL vaccines. Thanks also to the choice of convenient methods (water, spray, or individual) offered by Delaware Poultry Laboratories to meet the need of every farm, of every situation. We would like to help you find the right DPL program for your operation. Please fill in the questionnaire below and take advantage of this DPL service today.

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A tailor-made vaccination program.
I raise ..... at a time.
My farm is .... miles to nearest farm.
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Address .....
Any particular health problem? Please explain fully.

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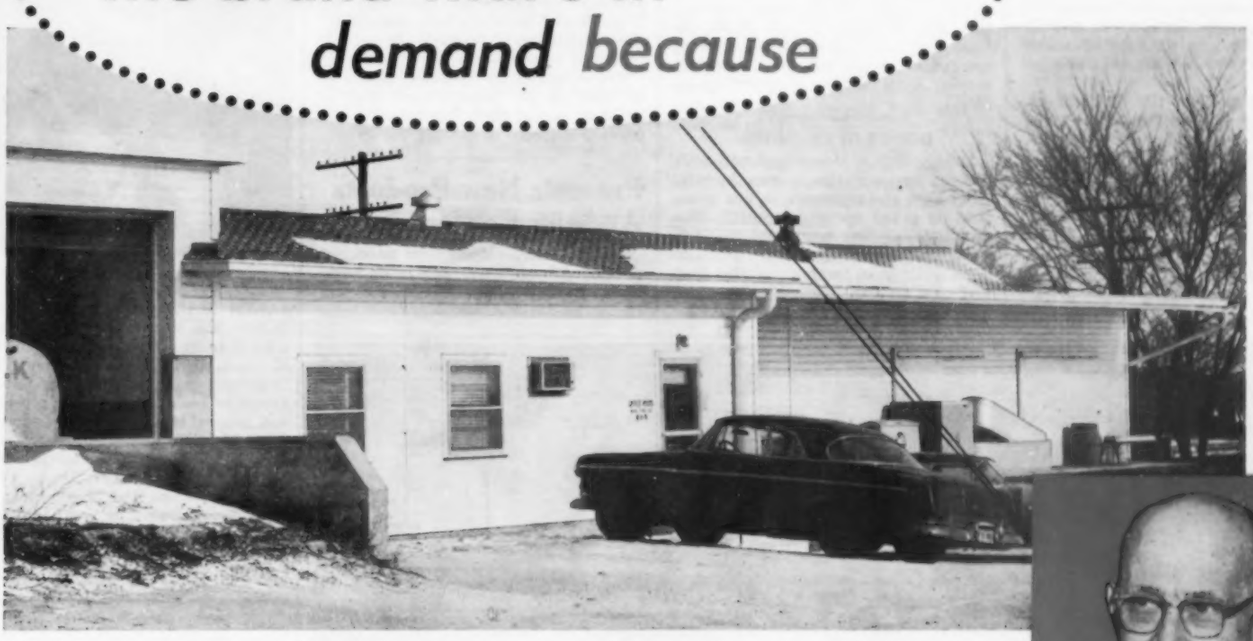
"We sell Scotch O Lass, the brand that's in demand because



9 OUT OF 10 NEW CUSTOMERS REPEAT ORDER

"We believe we can DOUBLE our sales of Scotch O Lass because nine out of ten customers who try it continue to use it."

"It's really palatable, our customers report. They find that cows drink more water and production increases. Many have reported higher butterfat milk tests after adding Scotch O Lass to rations."

Burlington Milk Products Co. started selling Scotch O Lass in 1957—SOLD 75 TONS last year alone. Mr. Schairer says: "It's easy to sell Scotch O Lass and it's a profitable item to handle."

YOU TOO CAN PROFIT SELLING Scotch O Lass

85% Feeding Cane Molasses DEHYDRATED on Soybean Millfeed

DOES NOT REQUIRE A MILL OR MIXING EQUIPMENT TO SELL. Burlington Milk Products does not have a mill or mixing equipment, yet they sold over 75 tons of Scotch O Lass last year.

SCOTCH O LASS makes a low cost, effective, silage preservative. Only 25 to 50 lbs. per ton of silage—and makes silage MORE PALATABLE.

IDEAL FOR DAIRY FEEDS.

EXCELLENT TOP DRESSING FOR CATTLE FEEDS.

GOOD WAY TO GET PIGS ON FEED FAST.

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Please send me complete details on Scotch O Lass.

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SPEA Plans Executive Management School

RICHMOND, VA.—The first session of the Southeastern Poultry & Egg Assn. annual executive management school will open April 26 at the University of Georgia, announced J. M. Tankersley, Gainesville, Ga., chairman of the program committee.

The school, hailed as "one of the most outstanding services offered by any poultry organization," is divided into three sessions during a 12-month period. The first session will end on May 1.

Designed to meet the needs of today's busy poultry executive, the school has the dual objective of making the executive more effective in his present position by preparing him now for greater responsibilities in the future, according to a SPEA announcement.

The first session will involve problems in the areas of finance and credit, creative thinking, executive salesmanship, wage and hour regulations, business policy, poultry statistics and their application, intra-company communications, business forecasting, and administrative practices.

Tuition per session is $150, Mr. Tankersley said, or $350 for registrants who pay in advance for all three sessions, and each registrant must pay his own meal and lodging expenses.

Applicants for this year's school should contact Southeastern's Decatur, Ga., offices at 235 E. Ponce de Leon Ave., as soon as possible to be assured of enrollment for the spring session April 26-May 1, according to SPEA.

HOLDS OPEN HOUSE

BOAZ, WIS.—A new feed mill built here as a cooperative venture by business men and residents of this area, held its grand opening recently. The mill building has been sold to Jack Daugherty and Beauford Hanson. John Killroy is foreman of the feed and seed service.

New Hull-less Barley Announced at Utah

LOGAN, UTAH—A new hull-less variety of barley is due for release to certified seed growers in the spring by the Utah Agricultural Experiment Station.

Dr. Rollo W. Woodward, U.S. Department of Agriculture scientist with the station, and Dr. Wade G. Dewey, assistant professor of agronomy at Utah State University, have developed the high-energy variety in plant breeding experiments.

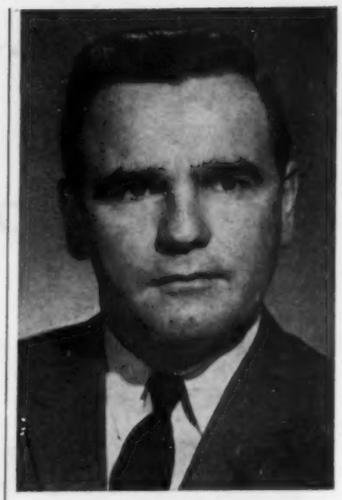
It's adapted for a cereal product, as well as for poultry feed, and a national cereal firm has already expressed interest in buying the grain.

Presents New Products At Sales Conference

NEW YORK—Many new products developed by Magnus, Mabee & Reynard, Inc., New York essential oil firm, were presented at the company's 1959 sales and technical conference, held at the Warwick Hotel here.

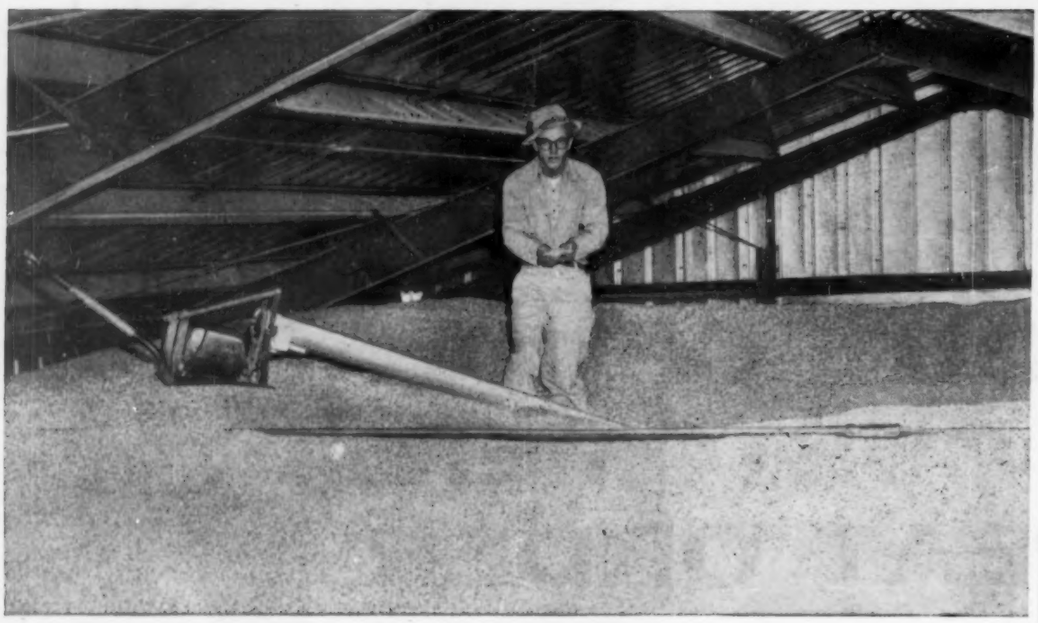
Sales representatives from all parts of the U.S. and from overseas were present at the three-day conference. Special symposia were devoted to the applications of company products in the pet food, feed, pharmaceutical and other industries.

Percy C. Magnus, president, stated: "New products are the lifeblood of industry. Magnus, Mabee & Reynard is better equipped than ever before to supply superior, imaginatively-conceived flavors and fragrances for the new products of our customers."



Don Schrader

SALES MANAGER—Don Schrader, Dallas, has been appointed national sales manager for the mobile division of Seco, Inc., Nashville, Tenn. The announcement was made by Paul J. Zimmerman, executive vice president and general manager. Prior to joining Seco, Mr. Schrader was district manager for Daffin Manufacturing Co. in charge of operations in Texas, Oklahoma, Louisiana and Mississippi. Before joining Daffin he was vice president of the National Dispensing Co., Lansdale, Pa. He is a graduate of the University of Pennsylvania.



Butler flat storage may cost a few cents a bushel more...

BUT IT'S WORTH MORE! Before you invest in "bargain" grain storage buildings stop and think of your investment in grain versus the risk in the building. Take a 100,000-bushel building full of corn at $1.25 a bushel, for example. The building is protecting an investment of $125,000 in grain.

But a leaky roof could bring that grain down to sample grade, and cost you half your investment—that's far more than you actually paid for the building itself.

Losing only a couple of carloads (3,600 bushels) could cost as much as $4,500. And in a 100,000-bushel building, it figures out to 4½¢ a bushel.

Why gamble your grain investment in "bargain" storage? Butler, the safest flat storage may cost only a few pennies a bushel more. Why is Butler the safest storage?

First, Butler buildings have been engineered by experts—men who have been in the grain storage business longer than most . . . know it better.

Second, Butler buildings are made better. The rigid frames that give the building strength are precision made from specification steel. That's steel of consistently high quality . . . steel that meets high standards of strength. Then too, Butler roof and wall panels are die formed with a special corrugation that not only makes them stronger . . . but assures a perfectly weathertight fit. Besides this, Butler uses Panlastic,® a special weatherproofing compound, that prevents water seepage due to capillary action.

And, Butler doesn't skimp or leave out many of the little, but important details that give a grain storage building extra strength . . . extra weather-tightness.

Before you invest in flat grain storage, contact your nearby Butler Builder. He'll be glad to show you why Butler flat storage is the lowest-cost safe storage in the long run. Or write direct.

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There's an Automatic Mill for mounting overhead, in driveways, grain elevators, on trucks, corn shellers, feed wagons, mixers . . . any special installation. 12 sizes available.

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Outlines Feed Program For Breeder Flocks

ATLANTA, GA.—Restricted feeding of chicks during the growing period and full feeding during production is the general feeding program carried out by Cotton Producers Assn. hatcheries in their breeder flocks, according to a report in a recent issue of Dixie Co-op News, association publication.

The report said feed intake is restricted during the growing period to delay sexual maturity, giving fewer small eggs and more hatchable eggs. It also results in fewer ruptures of the oviduct and a longer period of lay, according to the report.

"We have found that locality and the various seasons of the year may affect the feeding program and that no program can be followed as outlined and must be varied to suit each individual flock and condition of birds," the report said. "Feed intake should be lowered slightly if on range where grazing is provided."

The feeding program, as outlined in the report, calls for starting the chicks at one day of age using starting and growing mash with bifuran for the first six weeks. The bifuran is used in connection with a vaccination program for coccidiosis.

At five weeks, a small feeding of oats is started in the afternoon and increased as fast as the birds will consume them so as to be feeding 10 lb. per 100 birds at eight weeks.

At eight weeks, the mash intake is restricted to 8 lb. per 100 birds and the oats to 10 lb. per 100 birds. When the birds are 12 weeks, mash is increased to 10 lb. and oats to 12 lb. per 100 birds and continued to 23 weeks of age. By this time the birds should be in production and changed to an all-mash breeder ration, the report said.

This is continued for the entire laying period except when the birds need additional body weight—then oats are substituted with scratch feed or corn at the same rate. Stress feeds are used during any stress period or disease occurrence during the growing and laying periods, but at no time during the growing period after eight weeks are the birds placed on full feed. During the late part of the laying period and in hot summers, stress feeds are also used.

Cockerels are separated when possible during the growing period and maintained on 90% of full feed using half starting and growing mash and half oats.

3 Abbott Promotions In Scientific Divisions

NORTH CHICAGO, ILL. — Three promotions in the scientific divisions at Abbott Laboratories, North Chicago, have been announced by Elmer 1946, assistant director of research in 1949 and associate director in 1950.

Dr. Kenneth E. Hamlin has been appointed director of chemical research, in charge of organic chemistry, biochemistry, physical chemistry and microchemistry as well as the scientific library and the science information center. Dr. Hamlin joined Abbott in 1943 as a research chemist.

Dr. Robert W. Rivett is now director of development. He came to Abbott in 1946 as a research microbiologist. He was appointed manager of development laboratories in 1958.

B. Vliet, vice president and scientific administrator.

Dr. Marlin T. Leffler has been appointed director of exploratory research, responsible for expanding and coordinating outside research contacts, both domestic and foreign; for developing new research projects, and for research involving agricultural and industrial chemicals. He will continue in charge of nutritional research and the research farm.

Dr. Leffler joined Abbott in 1936, became head of organic research in

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PROCESSING PLANT OPENS

FOREST, MISS. — The Forest Packing Co., a new processing plant built and equipped by local investors, went into production during February, according to Jack Elliott, manager.

Test Additives in Dairy Feeding Trials

ST. PAUL, MINN. — Two of the new feed additives, Dynafac and Protamone, did not improve performance of dairy animals in feeding trials held recently at the University of Minnesota, according to Dr. J. D. Donker, A. C. Linnerud, V. K. Singh and H. J. Rebhan. They fed Dynafac to 10 milking cows for three months. They reported that at the end of the trial they found no difference in milk production, fat content of milk, feed consumed, amount of feed consumed per unit of milk produced and weight changes of the cattle.

They fed Dynafac at 1.5 gm. per day. Although it had no effect in this trial, the additive might benefit cows when a subclinical disease is present, they said.

Protamone, the iodinated-casein form of thyroxine, is sometimes thought to increase growth rate or feed efficiency of heifers, the researchers said. They fed heifers of breeding age enough of the hormone so their heart rate would be about 10% above their twin sisters not getting the additive. This required about 7 gm. of Protamone daily at 600 lb., and it increased to 9 gm. as the animals grew to 740 lb., they reported.

In the first two trials, Protamone had no effect either on growth rate or amount of feed the heifers ate, they said. In the second test, the heifers getting Protamone gained weight more slowly than those not fed the additive. The additive did speed up the heart rate, but this had no beneficial effect. In fact, when the heart rate approached 10% increase above animals not getting Protamone, the growth rate actually decreased, the researchers said.

PURCHASES BROILER FARM

FOREST, MISS.—Calhoun Poultry & Feed Co. has purchased the Lyle Tate broiler farm east of Forest. The transaction included 12 acres of land and six broiler houses, with total capacity of 78,000.

Bag to Bucket to Bunk-

...Familiar Taste Avoids Feed Change Setbacks

CAFNECTAR Sweet Milk Flavor in your Milk Replacer and Starter Formulas helps get calves on dry feed earlier

Traditional flavor ingredients like anise can actually decrease the consumption of calf starter formulas.* That's why Cafnectar Sweet Milk Flavor is so important to you and your customers. Cafnectar has a familiar and accepted taste that eases calves from the bag . . . to nipple bucket . . . to fortified dry starter formulas. There are no setbacks with Cafnectar—calves get on dry feed earlier.

As little as a half pound of Cafnectar per ton of feed does the job. This water soluble concentrated sweet milk flavor adds a rich appetite appealing taste and aroma calves love and can't resist.

Now's the time to try Cafnectar Sweet Milk Flavor in your milk replacer or calf starter formula. It's the low cost answer to the big problem of high uniform taste appeal in calf formulas.

Clip the coupon now for a 10 pound trial order. Find out what a difference Cafnectar will make in your calf formulas.

*(*A University of Georgia test shows a half pound of anise oil per ton of calf starter actually decreased the consumption of the feed by as much as one half.)*

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☐ Rush FREE sample of CAFNECTAR with new brochure, prices and complete information.

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1 Sq. Ft. Enough For Laying Hens, Says Poultryman

ST. PAUL — One square foot of floor space for each laying hen is enough, if there is plenty of feeder and water space and good ventilation, according to R. W. Berg, extension poultryman, University of Minnesota. Until recent years, the common recommendation was 2 sq. ft. per hen.

Mr. Berg said that while confining birds to 1 sq. ft. each may slightly lower egg production per hen, the flock owner will make more total profit from his house, since he can keep twice as many birds. He advised the producer to make sure he has at least 3 in. of feeder space and 1 in. of waterer space per bird and a ventilation system that will move 3 cu. ft. air per minute per bird.

Mr. Berg said confining birds to such a small area is as feasible with a conventional floor as it is with a slated floor arrangement. If the litter is kept clean and there is good ventilation, conventional floors will result in eggs as clean as will slats, the poultryman observed.

It has sometimes been thought that closely-confined birds on slats would produce better than if kept on litter-covered floors. But Mr. Berg pointed to evidence showing this isn't necessarily so.

In an Illinois study, he said, birds housed at 1 sq. ft. per hen on conventional floors laid 5.6% more eggs than birds on slats. Also, there was 4.9% greater mortality on slats than on floors.

For birds housed at 2 sq. ft. per bird, there was 0.2% difference in egg production in favor of the slats—too small a difference to be important, he said. At 1½ sq. ft. per hen, birds on conventional floors laid 5.6% better than those on slats.

Averaging all of these trials showed that birds on conventional floors laid 4.3% more eggs, and had 4% less mortality than birds on slats.

Mr. Berg noted that slatted floors do have some advantages. They can help keep the house more sanitary and eliminate need for litter. On the other hand, if the manure is not cleaned out often, there will continually be strong ammonia fumes given off from it.

Zinc Toxicity Not Likely, Test Shows

URBANA, ILL.—Growing-finishing pigs can stand at least 20 times as much zinc as they ordinarily get in their ration to prevent or cure swine parakeratosis, it has been indicated by a study made by the department of animal science, University of Illinois. Dr. D. E. Becker, associate professor in the department, reported in a recent issue of "Illinois Research," published by the Illinois Agricultural Experiment Station, that test results show the occurrence of zinc toxicity from present rations is unlikely under practical conditions.

He said that since too much zinc is poisonous, the department of animal science has been conducting experiments to determine whether the amounts commonly fed will cause any trouble.

"Supplementary zinc in the ration can prevent or cure swine parakeratosis," he said. "It is therefore common to add 25-50 parts per million of zinc to rations of growing-finishing hogs."

Different levels of zinc, ranging up to 8,000 p.p.m. in the diet, were fed for six weeks to 92 weanling pigs to determine zinc tolerance and the symptoms of zinc poisoning. The zinc was added as zinc carbonate to corn-soybean meal rations.

The maximum level tolerated was 1,000 p.p.m. Higher levels produced symptoms of zinc poisoning, including a lowered daily gain and a greater feed requirement per pound of gain. Arthritis, hemorrhage in the front flanks, gastritis, enteritis, congestion of the internal organs and hemorrhages of the brain, lymph nodes and spleen were observed also. Many animals died within three weeks.

Dr. Becker reported that hemoglobin values were not affected by the level of zinc fed.

Richard C. Bryan Stanley L. Flinn

JOIN HESS & CLARK—Richard C. Bryan and Stanley L. Flinn were added recently to the field sales force of Hess & Clark, Ashland, Ohio, animal health product manufacturer. Mr. Bryan will serve as territorial sales representative in southern Missouri and northwestern Arkansas, and Mr. Flinn will serve the firm in eastern Texas and Louisiana. Mr. Bryan was formerly a sales representative for American Cyanamid Co. He is a graduate of Oklahoma State University. Mr. Flinn was formerly with Red Chain Feeds, Center, Texas, where he was in charge of broiler financing operations. He is a poultry husbandry graduate of Texas A&M College.

Kentucky Group Forms Egg Association

LOUISVILLE, KY.—The Kentucky Poultry Federation board of directors has approved the formation of an egg association which is to function as an affiliate of the Kentucky Poultry Federation.

It is designed to give grass roots assistance to the production of eggs, according to an announcement by Ralph McManigal, president of the federation.

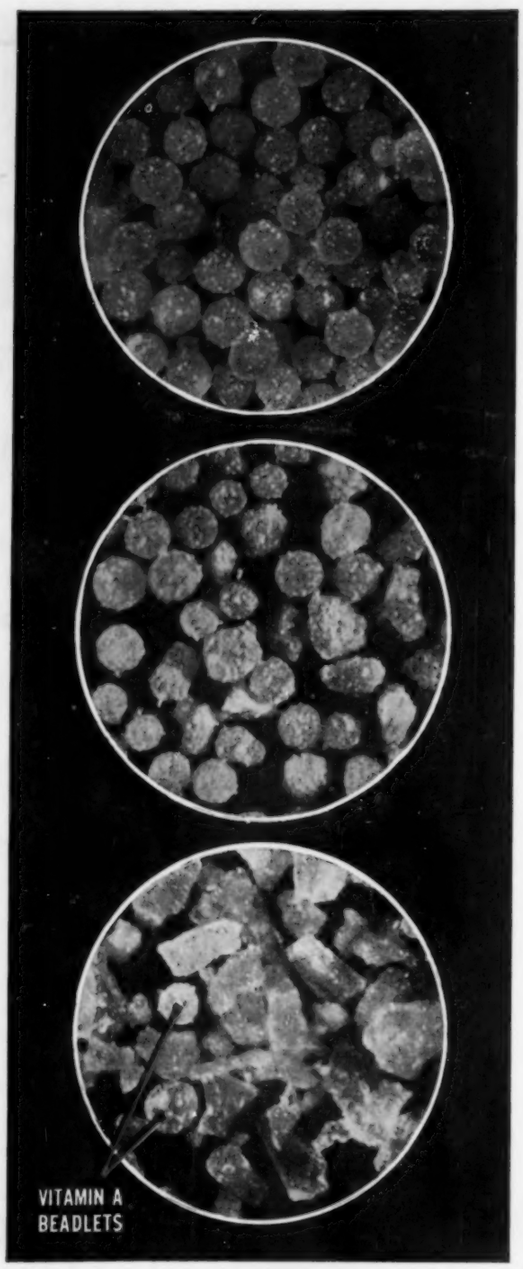
The board also appointed a committee to study the fund raising program of the Poultry & Egg National Board for egg promotion.

WHAT IS THE *active particle* CONTENT OF YOUR VITAMIN A SOURCE?

Many vitamin A products offered to feed manufacturers at a potency level of 30,000 U.S.P. units per gram or less are simply diluted forms of much higher potency concentrates. Usually beadlets of 250,000 to 500,000 U.S.P. units per gram are mixed with a suitable quantity of filler to obtain the desired potency.

Micratized Vitamin A, 30,000 U.S.P. units per gram, is dramatically different—and in a way that is of key importance to you and your customers. Instead of preparing a high-potency beadlet and then diluting it down with filler, Nopco follows the more costly but nutritionally sounder procedure of building to potency, literally *from the ground up*. The only inactive diluent present is included to guarantee the free-flowing properties of the product. The result is a concentrate in which virtually *every particle is vitamin-A-active*. You thus have assurance of complete dispersion in your feeds and uniform nutrition for the animal.

Be Sure to Specify
Micratized® Vitamin A
Uniformly active particles for uniform dispersion, uniform nutrition, uniform stability, uniform results



THREE PHOTOMICROGRAPHS OF VITAMIN A PRODUCTS

Top: Micratized Vitamin A, Nopcay® Type III. Spherical beadlets are A-active particles. Note that *all* particles in this product are A-active.

Center: Micratized Vitamin A, Nopcay Type V. Note that almost all particles are A-active. Occasional non-spherical particles are diluent, and included to assure free-flowing properties of product.

Bottom: A typical competitive product. Only two spherical A-active beadlets surrounded by non-active filler.

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DR. G. F. HEUSER
Director
Stonemo Poultry Research Farm

A career poultryman, college professor, author and editor, Dr. Heuser has been widely acclaimed for his work, his research, and contributions to advances in poultry science.

Dr. Heuser was the third person in the U.S. to receive a Ph.D. in Poultry Science (Cornell, 1918), and for 35 years was Professor of Poultry Husbandry at Cornell University. He is a former editor of both Poultry Science and World Poultry Science Journal.

FILM AVAILABLE AT NO COST

An educational 25 minute color 16 mm. film has been prepared by the Stone Mountain Grit Company. You will see how granite is mined, crushed, and distributed as granite grit. You will visit the Stonemo Poultry Research Farm, and see firsthand how granite grit helps increase egg and poultry meat production. This film will be lent at no cost to responsible groups. When writing, please use your letterhead and indicate a preference of several dates.

Sta-Kleen NESTING MATERIAL

Another fine product to increase poultry profits. Write for full data.

STONE MOUNTAIN GRIT COMPANY, INC.
Lithonia, Georgia

Have You Been Asking These Questions About Granite Grit ?

Question: **What is the chief function of grit?**

Dr. Heuser: The chief function of grit is to pulverize feed and other materials which the bird eats. This is done in the gizzard. It is especially important that feeds and materials of vegetable nature—grains and their by-products and grasses—be broken down since the valuable nutrients are locked in with fiber or cellulose coatings which are not digested by enzymes and which must be broken down mechanically.

Feeds of animal origin can be acted upon directly chemically.

Question: **Does that mean that the birds receiving all mash rations do not need grit?**

Dr. Heuser: Not at all. It is true that feed efficiency is greater when whole grain is fed, but even all mash rations as fed are not fine enough to get the most nourishment out of the particles. Grit thus helps to reduce the feed bill.

Another important reason for feeding grit is the grinding of such materials as litter, feathers, dried grass, and other bulky or fibrous substances which the birds consume. These must be reduced so that they will pass through the digestive tract and not cause hindrance to the digestive processes or even impaction.

Question: **Can any kind of grinding agent be used as grit?**

Dr. Heuser: Any material will have some grinding action, but harder substances, such as insoluble gray granite grit with black specks of mica, are more efficient and last longer.

Question: **What effect does the feeding of grit have upon the gizzard development?**

Dr. Heuser: A number of reports as well as observation indicate that birds receiving grit have larger gizzards—sometimes as much as 50% larger—which have firmer muscles and are generally more healthy looking. The no-grit gizzard muscles are flabby and have a dull color. The linings of the grit-fed gizzards have been reported to be thicker, tougher and free from gizzard erosion.

Question: **Suppose, Dr. Heuser, that a bird did eat too much grit, will an excess amount of grit do any harm?**

Dr. Heuser: No. Excesses will be very quickly passed from the gizzard and excreted.

Do you have a question regarding the feeding of granite grit? If you do, please address it to Dr. G. F. Heuser, c/o Stonemo Poultry Research Farm, Lithonia, Georgia.

Birdseye view of the Stone Mountain Grit Company's Poultry Research Farm, Lithonia, Georgia. Here constant feeding experiments are being made by Nutritionists and Research Workers to help you get Maximum Nutritional Values from every ton of poultry feed you buy.

STONEMO GRANITE GRIT—*The Grit with the* "EXTRA GRINDING SURFACES"

Expanded Activity, Added Personnel In NEPPCO Plans

TRENTON, N.J. — An expanded program of activity, backed by the addition of new top-level personnel, has been approved by the executive committee of the Northeastern Poultry Producers Council.

Ernest F. Smith, Kenton, Del., NEPPCO president, announced the council's plans for intensified effort on several new programs.

Getting top priority during the coming year will be a concentrated study on the place the family farm will have within the structure of integrated poultry setups, and how the family farm poultry enterprise can co-exist with the forces that have tended to meld smaller farms into larger units.

The council also expects to exert more pressure upon its program of winning quality incentives for poultrymen, as well as conducting research on egg quality improvement programs, improved packaging, the development of modern methods of marketing and merchandising, and the possible efficiencies in mergers of egg and poultry marketing cooperatives.

To handle the expanded program, NEPPCO has reorganized its headquarters staff, creating two new posts, an executive secretary and a director of research and development. The title of "managing director" will be discontinued. Dr. Alfred Van Wagenen will assume the post of director of research and development and will directly supervise many of the new projects as well as those now operating. The new post of executive secretary has not yet been filled, according to Mr. Smith.

Agribusiness Training

GAINESVILLE, FLA. — The University of Florida College of Agriculture plans to expand the training offered in the field of agricultural business, it has been announced by Dr. Marvin A. Brooker, dean.

Beginning in September the department of agricultural economics will have a curriculum in agricultural business management to provide training for those interested in farming, professional farm management, marketing and processing, farm supply, federal and state regulatory agencies, farm magazines, farm organizations and many others.

Brood Sow Feeding Objectives Outlined

EAST LANSING, MICH.—The objectives of brood sow feeding were outlined by Dr. J. A. Hoefer, professor of animal husbandry, at Michigan State University's Farmers Week.

"Successful brood sow feeding should produce large litters of strong pigs, and should be done with as little feed cost as is possible," he declared. The ration should support growth in the gilt and maintenance in a sow and meet needs of the developing young, Dr. Hoefer pointed out.

If the ration is hand fed, about 1 to 1.5 lb. for each 100 lb. of sow is needed, and ½ lb. more is needed for gilts. A bulky ration can be self fed, helping to control weight gains in pregnant swine.

Dr. Hoefer said gilts should be full fed to 125 lb., and then kept from getting fat until two weeks before breeding, when they should be full fed. After breeding, they should gain no more than 1 lb. day, he told the swine men.

Rations, he said, should include about 15% total protein, of which 5% is animal protein, 15-50% alfalfa and a balanced intake of minerals and vitamins.

Gene Fuller

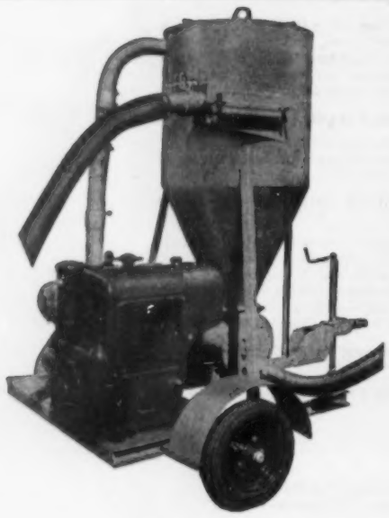
APPOINTED—Gene Fuller has been appointed southeastern division manager for Peterson Sales, Inc., Decatur, Ark., distributor of the Peterson Male, broiler breeder. Mr. Fuller will direct sales and service for the southeastern U.S. He will also manage the new Peterson branch to be located at Gainesville, Ga. Mr. Fuller is a 1949 graduate of the University of Georgia. He received his master's degree in 1950 in poultry genetics. Previously, Mr. Fuller operated his own poultry supply business, and before that he was a representative for Siler City (N.C.) Mills; Unity Feeds and Arcady Farms.

PELLET PLANT BURNS

REDVALE, COLO.—A $70,000 pellet plant on the ranch of Judge Dan H. Hughes in Dry Creek Basin, 14 miles south of here, was destroyed by fire recently, apparently caused by a short circuit in electrical wiring.

Daffinaire

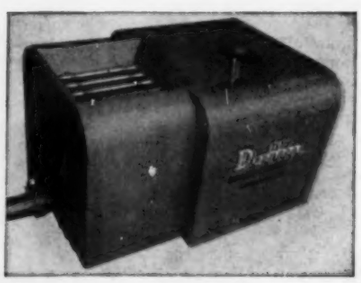
BULK MATERIALS CONVEYING SYSTEMS



There's a Daffinaire Unit to fill your need For loading and unloading feed . . . with speed!

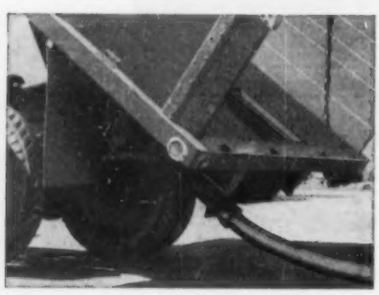
DAFFINAIRE VAC-Conveyor—

Self-contained unit combines high capacity vacuum pick-up pressure-discharge conveying system with advantage of complete over-the-road mobility. Unique push-pull power permits material transfer through lightweight flexible tubing over greater distances at a faster rate of flow with less danger of plugging. Fully equipped with power unit, positive displacement air pump, tubing and couplings.



DAFFINAIRE CONVEYOR—

Easily maneuvered unit (only 32" high) designed for use both in or out of mill . . . can even be pushed aboard a truck for multiple uses. Moves on casters. Capacity for handling all types of free-flowing material including molasses feed. Gravity-fed, unit can be connected to negative-positive system. Unit fully equipped.



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Oil solubles vitamin protector and pigmentation aid.

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BoDEE (Mineral) STABLE VITAMINS D
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For better poultry pigmentation.

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Dry, free-flowing partially hydrogenated animal fat.

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Effective dog food deodorant.

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Bowman Feed Products, Inc.

130 Central Ave. HOLLAND, MICH.
13160 Ortley Place VAN NUYS, CALIF.

by Eugene S. Hahnel

A mighty excited and proud Wood family listens in awed delight as bidding on "Holy Cow" nears the final $25 per pound. The purebred Angus was bred, fed, and finished on the Wood farm on his way to the double-crown Junior and Open Championships at the "World Series of Agriculture." Standing at the Champion's head is Chuck Wood, Jr., holding steer. To his left are his parents and young brother (and co-owner) Gregory.

A straight "A" student, President of the Student Body (750 students), Managing Editor of his school paper, and Chairman of Clay County March of Dimes, Chuck Wood has little time to rest on his laurels. His prize winnings, shared with his brother Gregory, will go a long way toward assuring this outstanding lad the opportunity to follow the profession of his choice. He intends to major in medicine at the University of Iowa.

"Holy Cow" fed Stilbosol supplement for 180 days

Grand Champion Steer at International Live Stock Exposition dresses out at 67.35%. Charles "Chuck" Wood, 18-year-old Spencer, Iowa, high-school senior, reaches top on third try.

This spring, Chuck, Jr., also took over feeding his father's carlot for the International. They were on the same feeding program as "Holy Cow," including Stilbosol for 180 days. Later, Mr. Wood topped the market with 24 feedlot mates of the 4th-prize winning steers shown here. The 24 market-topping steers were fed Stilbosol supplement for 365 days.

Standing next to one of next year's show prospects, Chuck points to the "false ceiling" he installed in the barn. A 6-inch layer of straw spread over wire mesh helps reduce heat loss and cold drafts during the bitter Iowa winter.

Another management trick young Wood uses is a water-tank heater. It assures his cattle plenty of warm water during freezing weather, and saves a tremendous amount of time and labor during the winter season.

"Cattle power" takes the place of mechanical power in Wood's 1200-ton pit silo. Cattle eat their way through the silo, as the metal gate is pushed back every few days.

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Procaine-Penicillin-G • Vitamin B_{12}

Stilbosol®
(diethylstilbestrol premix, Lilly)
Lilly

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7413—Multi-Use Feed Wagon

A new model of the "Port-A-Mix" combination wagon, feed mixer and elevator, has been announced by Brower Manufacturing Co. The unit is now equipped with hoppers made of 14 gauge galvanized steel, the company says. According to company literature, the unit hauls, mixes, elevates and unloads, eliminating the need for bags, scooping and shoveling. It is equipped with horizontal and vertical augers which handle all kinds of feed and supplements. The bin is V-type so that all contents flow freely to the bottom. A mixing compartment fills into a storage compartment after mixing is completed. Details can be obtained by checking No. 7413 on the coupon and mailing to this publication.

No. 7411—Silage Activator

Commercial production of a silage activator called Silo-Zyme Culture Concentrate has been announced by the Biochemical Corporation of America. The action of the concentrate in the silo is biochemical rather than chemical, the company says, its silage organisms and enzymes complementing the work of the bacteria in the silage itself. Through its enzymatic action, a more rapid growth of the beneficial organisms in the silage is promoted, the company said. The concentrate helps break down cellulose, converts starch to sugar and sugar to lactic and acetic acids, converts proteins to peptides and amino acids and improves digestibility and palatability, the company claimed. Details are available by checking No. 7411 on the coupon and mailing.

No. 7410—Feeder Valve Bulletin

The availability of a revised technical bulletin on rotary vane feeder valves has been announced by Sprout, Waldon & Co., Inc. The bulletin contains close-up photographs, exploded views and engineering drawings. Entitled Bulletin 24D, the publication contains details on the design and application of rotary valves as feeders, airlocks or explosion checks. Copies can be obtained by checking No. 7410 on the coupon and mailing.

No. 7414—Poultry Raising Manual

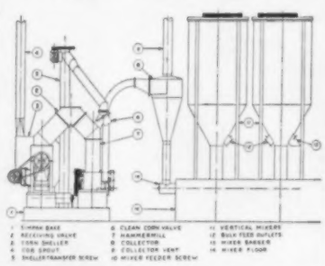
A 12-page manual describing specialized marketing advantages and selection techniques for Cornish Crosses and other meat strains has been published by Earl W. Garrison, Inc. The fully illustrated brochure outlines Garrison's methods of producing meat birds. Also included is information on how to obtain greater farm returns by specializing in Cornish fowl. Copies can be obtained by checking No. 7414 on the coupon and mailing to this publication.

No. 7412—Portable Pasture Waterers

Starline, Inc., and H. D. Hudson Manufacturing Co. have been appointed U.S. distributors for the European-made Utina self-serving portable pasture waterer. The waterer, according to company literature, is designed to free the farmer of the chore of filling watering tanks by letting the animal draw its own water as needed. With very little pressure required, the pump will draw water from distances up to 80 ft. and depths of 20 ft. By depressing and releasing a pendulum with its nose, the animal creates a suction in the pipeline which delivers water into a drinking basin. The unit weighs 60 lb. Check No. 7412 and mail for details.

No. 7415—Feed Mill

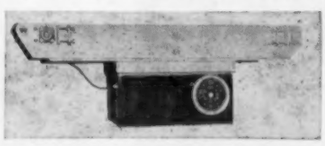
Simpak, a newly developed feed mill, has been introduced by the Shelby Manufacturing Co. The Simpak is designed to supply all feed processing requirements with a single unit, the company said. Capacities range between 50 and 80 tons of mixed feed a day. According to company literature, one man can handle the output if the feed is handled in bulk only and two men can take care of bulked and bagged feed. Features include a



pre-wired, dust-tight control panel that consists of fused magnetic starters, trip relay and push button controls wired for proper operating sequence, the company says. Space required to install is 26 ft. length, 9 ft. width and 18 ft. height. It is a complete shelling, grinding and mixing unit. For feeding ear corn and grain to the unit a number of pit screw assemblies are available. Check No. 7415 on the coupon and mail.

No. 7409—High Speed "Checkweigher"

A Thayer Scale Continuous High Speed Checkweigher for package and unit inspection has been announced



by Thayer Scale Corp. The unit is equipped with a patented Thayer plate flexure plate leverage system, which the company claims will retain its accuracy for the life of the scale. The scale has a high speed continuous running conveyor belt capable of handling up to 100 lb. bags at a rate of up to 25 per minute, company literature said. As the package travels across the scale it is automatically weighed, with the weight indicated on an over-under dial. A warning device sounds in the event of off-weights beyond set tolerances. Check No. 7409 and mail to this publication for details.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7337—Plate magnet, Stearns Magnetic Products.

No. 7338—Advertising promotion offer, Hess & Clark, Inc.

No. 7339—Automatic bag closer, Dave Fischbein Co.

No. 7340—Leghorn nest, Keenco Farm Equipment Co.

No. 7341—Knife cutter data sheet, Sprout, Waldron & Co.

No. 7342—Folder on magnetic separators, Jacobson Machine Works, Inc.

No. 7343—Rotary paddle feeder, Richardson Scale Co.

No. 7344—Coccidiosis control booklet, Dorn & Mitchell Laboratories, Inc.

No. 7345—Drug proportioner, Vineland Poultry Laboratories.

No. 7346—Booklet on materials handling, Tote System, Inc.

No. 2086—Temperature monitoring device, Rolfes Grain Aeration Companies.

No. 7347—Feed analysis table, The Nopco Chemical Co.

No. 7348—Steel egg cooler, Sunset Equipment Co.

No. 7349—Bulletin on roller mills,

Send me information on the items marked:

- ☐ No. 7409—High Speed "Checkweigher"
- ☐ No. 7410—Feeder Valve Bulletin
- ☐ No. 7411—Silage Activator
- ☐ No. 7412—Portable Pasture Waterers
- ☐ No. 7413—Multi-Use Feed Wagon
- ☐ No. 7414—Poultry Raising Manual
- ☐ No. 7415—Feed Mill

(PLEASE PRINT OR TYPE)

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No. 7350—White Cornish breeder cockerel, Jeff D. Brown Co.

No. 7351 — Fork lift, Towmotor Corp.

No. 7352—Data sheet on rail car, General American Transportation Corp.

No. 7353—Moisture balance, Central Scientific Co.

No. 7354—Mastitis treatment, Chas. Pfizer & Co.

No. 7355—Story on plant layout, Sprout, Waldron & Co., Inc.

No. 7356—Sow farrowing stall, Bel Echo Manufacturing Co.

No. 7357—Corrugated grain bins, Butler Manufacturing Co.

No. 7358—New products folder, Prater Pulverizer Co.

No. 7360—Bag weigher-filler, Bemis Bro. Bag Co.

No. 7361—Conveyor system, Wyatt Manufacturing Co., Inc.

No. 7362—Control panel, Richardson Scale Co.

No. 7363—Live poult display, Western Condensing Co.

No. 2985—Moisture balance, Seedburo Equipment Co.

No. 7364—Dog food ingredient, Western Condensing Co.

No. 7365—Bulk feed body, North American Manufacturing Co.

No. 7366—Poultry supply catalog, Anderson Box Co.

No. 7367—All-purpose litter, the Bares Co.

No. 7368—Bagging, weighing machine, Finco, Inc.

No. 7369—Semi-bulk handling system, Powell Pressed Steel Co.

No. 7370—Blackhead medication, Dr. Salsbury's Laboratories.

No. 7371 — Herringbone milking stall, James Manufacturing Co.

No. 7372—Injectible iron, American Cyanamid Co.

No. 7373—Animal health display, Bingman Laboratories, Inc.

No. 7374—Bulk hog feeder, Leach Manufacturing Co.

No. 7375—Control for hammermills, Schutte Pulverizer Co.

No. 7376—Bag packer, Bemis Bro. Bag Co.

No. 7377 — Pneumatic conveyor data, Sprout, Waldron & Co., Inc.

No. 8378—Bulletin on pulleys, Sprout, Waldron & Co., Inc.

No. 7379—Mobile feed mill, Seco, Inc.

No. 7380—Scoop control switch, Alden division, Amercon Corp.

No. 7381—Grain drier, Grain Drying Equipment Co., Inc.

No. 7382—Flexible coupling, T. B. Wood's Son Co.

No. 7383—Bag packer, Bemis Bro. Bag Co.

No. 7384—Automatic bag ejector, Richardson Scale Co.

No. 7385—Auger cattle feeder, James Manufacturing Co.

No. 7359—Magnetic separator bulletin, Stearns Magnetic Products.

No. 7386 — Data on fat addition, Sprout, Waldron & Co., Inc.

No. 7387—Coccidiosis book, Merck & Co., Inc.

No. 7388 — Bulletin on blowers, Young Machinery Co., Inc.

No. 7389—Car shaker data sheet, Syntron Co.

No. 7390—Pig creep feeder, Moorman Manufacturing Co.

No. 7391 — Movie on grit, Stone Mountain Grit Co.

No. 7392—Wall banner, Blatchford Calf Meal Co.

No. 7393 — Automatic hog feeder, Precision Equipment Co.

No. 7394 — Equipment catalog, Brower Manufacturing Co.

No. 7395—Power scoop data, Alden Equipment Division of Amercon Corp.

No. 7396—Poultry disease control, Associated Feed Products, Inc., and Naremco, Inc.

No. 7397—Bulk feed tanks, Agri-Tec Steel Corp.

No. 7398—Nutrient level card, Peter Hand Foundation.

No. 7399—Power shovel, Seedburo Equipment Co.

No. 7400 — Poultry pesticides, American Scientific Laboratories, Inc.

No. 7401—Loader for hopper cars, Productive Acres Manufacturing Co.

No. 7402—Bulletin on motor starters, Richardson Scale Co.

No. 7403 — Elevator equipment, Munson Mill Machinery Co.

No. 7404—Grain storage building, Stran-Steel Corp.

No. 7405—Silo counter display, Flavor Corporation of America.

No. 7406—Laboratory service data, Wisconsin Alumni Research Foundation.

No. 7407—Grain conveyor, cleaner, Dunbar-Kapple, Inc.

No. 7408—Air delivery feeder, Ripco Air Systems.

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Prepared by: Loncala Phosphate Co. High Springs, Fla.

Distributed by: Warren-Douglas Chemical Co.

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JERSEE VITAL-MIN

JERSEE JOBBERS AND WAREHOUSES FROM COAST TO COAST!

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IT'S LICKIN' GOOD . . . PROFITABLE, TOO!

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CAF-SUPP will brighten any dairyman's day. It's a dependable body building food, simple and economical to feed. Assures a definite return on your investment.

WRITE TODAY FOR DEALER'S SALES HELPS! JOBBER AND DISTRIBUTOR FRANCHISES AVAILABLE!

THE JERSEE CO. MINNEAPOLIS MINNESOTA

"Two years in operation

AND NO MAINTENANCE REQUIRED".....

Strong Scott

that's how James Schulte, Manager of Farm Service Company, Mediapolis, Iowa, described his Strong-Scott Quick-change Hammermill.

James Schulte, Manager, right, offers complete service to customers, in the modern office of Farm Service Company.

From remote controls on the main floor, any one of five sectionalized screens offering "vortex grinding" may be inserted into the Hammermill without shutting down the mill.

Approximately two years ago the Farm Service Company suffered a fire that destroyed much of their property. "We contracted the **T. E. Ibberson Construction Company** of Minneapolis, to build us a complete new addition," said Jim, "which included installation of a Strong-Scott Hammermill and Triple Action Mixer."

"We grind on the average of five hours a day and service an area of about eight miles radius of Mediapolis," said Jim. "Even with a 100 H.P. motor on the mill and 30 H.P. on the blower," he added, "our electric costs are kept at a minimum because we don't have to stop the Hammermill to change screens between grinds."

"At Farm Service Company, mixing has become 'just a push button operation,' with the Strong-Scott Triple Action Mixer. We mix a three ton batch in five minutes," said Jim, "and our customers are very pleased with the results."

Located over head in the driveway at Farmers Service Company, Mediapolis, Iowa, is a Strong-Scott three ton Mixer with positive-action chain drive.

EQUIPMENT DESIGNED FOR BETTER PROCESSING

The **Strong Scott** Mfg. Co.

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Dept. MI-59

7 Keys to Business Success

Sales manager of Canadian firm provides list of factors that determine how one business expands while the other fails.

By A. W. Archibald
Toronto Elevators, Ltd.
Master Feeds Division

Why is it that one man is successful while another in the same business with equal opportunities fails?

Two men started in the retail feed business about 25 years ago in the same general area and with the same opportunities. One was highly successful and developed many assets. The second man went broke a few years ago. Why the difference?

My answers to these questions are based on a comparison between the two businesses—one successful, one unsuccessful—and some personal observations from my own experience with our own company and with feed dealers over the past 25 years.

Here are the "seven keys" which I believe make a business tick:

KEY NO. 1—PRODUCT

I am firmly convinced that you must have a good product, whether you are manufacturing or retailing the product.

KEY NO. 2—PURCHASING

There is at least some truth in the old saying that a product well bought is half sold. Not only is it important to buy at the right price, but equally important is scheduling goods to arrive when needed so that you are neither over-stocked nor under-stocked.

Watching inventories is also an important point in buying. Buying well gives you the opportunity for inventory profit and keeping the loss to a minimum in a falling market.

I want to issue a word of warning in the business of inventory profit. Sure, you should watch your buying closely and, when you get the opportunity, take inventory profit. But don't get so engrossed in this business of trying to make inventory profit that you neglect some of the other more important segments of your business.

Any business founded on an inventory profit is founded on a very unsound basis and is not likely to be successful. The big thing in buying is having the goods in stock when you need them.

KEY NO. 3—CREDIT

Credit is one of the bugbears of the retail feed business. Two major errors commonly made in handling credit on both the wholesale and retail level are:

(1) When the account comes on the books, it is discovered that no clear cut basis, either in amount or time of repayment, was discussed.

(2) If a time of repayment was discussed and the account was not paid, nothing was done about it.

When the account is due it should be paid or there should be a logical reason why it isn't, and you should know that reason.

In business, you soon establish your reputation of handling accounts. If you are too easy, the customer soon recognizes this and comes to something like this line of thinking: "I owe John Jones, the feed dealer, $250, due Dec. 10, but he won't press me for it. I can leave it for another month or two." That "month or two" often drags on for five or six months, and worse still, often he starts to buy his requirements from one of your competitors.

When you give more credit than justified—easy credit—you are not a friend of that customer. You are hurting him.

Make full use of your bank. Sometimes you can get the bank and customer together and have the bank handle the credit for you. Also, the bank can usually serve as the best source of credit information.

Another point regarding credit: Your only justification in granting credit is to increase sales. Credit is a tool of sales. In the bigger American companies today credit comes under the man in charge of selling or marketing, and that is the way I think it should be.

KEY NO. 4—ADVERTISING

Probably the most difficult thing to assess is the value of advertising, and yet it has been proved, beyond any doubt, that it is absolutely necessary to advertise.

Earlier, I mentioned banks. They are generally considered conservative and have never established the reputation of spending money foolishly. What are banks doing about

EDITOR'S NOTE: From experiences over a 25-year period, A. W. Archibald, sales manager, Master Feeds division, Toronto Elevators, Ltd., Toronto, Ontario, presents in this article factors which he believes can mean the difference between failure and success in the feed business. His "seven keys" are: Product, purchasing, credit, advertising, merchandising, sales and employees. Ideas expressed in the article are taken from an address Mr. Archibald gave at the Ontario Retail Feed Dealers Assn. annual convention. Mr. Archibald's firm is a member of the Canadian Feed Manufacturers Assn., and the article was submitted by the association.

A POINT TO REMEMBER

PILOT BRAND OYSTER SHELL

HELPS YOU AND YOUR CUSTOMERS MAKE MORE MONEY

Poultry raisers know that PILOT BRAND helps them get more high quality eggs with stronger shells . . . the kind that bring top prices in the market.

Alert dealers, aware of the steady profits PILOT BRAND gives them, stock and display this best seller all of the time. And national advertising in leading farm journals and on 70 key radio stations is constantly increasing the demand for PILOT BRAND.

It's good, profitable business to push PILOT BRAND Oyster Shell . . . the largest selling, finest quality eggshell material in the world.

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THE MAN WITH THE ★ MULTIWALL PLAN

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PACKAGING SPECIALIST
WALTER STALER

helps packer cut his Multiwall costs by $60,000

Union Packaging Specialist Walter Staler is an economy expert. His Multiwall customers can vouch for it. One of them—a Midwest packer—recently asked him to analyze his bagging operation. Savings to the company are expected to hit $60,000 a year!

The analysis, made through Union's 5-Star Packaging Efficiency Plan, showed that the basis weight of each bag could be reduced by 20#. Another recommendation: Standardize all Multiwall styles and sizes to improve inventory control and simplify purchasing.

Union Multiwall Recommendations are based on this 5-Star Packaging Efficiency Plan

- DESIGN
- EQUIPMENT
- CONSTRUCTION
- SPECIFICATION CONTROL
- PLANT SURVEY

Union also suggested simplifying bag printing by changing it from two-color on both sides to two-color on one side. And, switching from a full white to a less expensive semi-bleached sheet. These improvements, together with new work and copy created by Union's Art Department, resulted in a more attractive, more economical package.

This $60,000 savings story is another example of what can happen when Union's 5-Star Plan goes into action. Why not put it to work in your plant?

Better Multiwall performance through better planning

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UNION'S PACKAGE ENGINEERING DEPARTMENT will study your Multiwall bagging methods and equipment and make appropriate recommendations, regardless of the brand of Multiwalls you are now using.

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UNION BAG-CAMP PAPER CORPORATION
233 BROADWAY, NEW YORK 7, N. Y.

advertising? Well, prior to 1940 practically nothing. But by 1945 they were spending $400,000 annually. By 1954, the last time I saw anything on this, every large bank had a professional advertising man, and they spent a total of approximately $2,000,000. No doubt the figure is considerably higher today.

Advertising (both wholesale and retail) performs two main functions: (1) Establishing name recognition, and (2) providing shoppers. Like credit, advertising should be looked upon as another sales tool to assist in increasing sales and profits.

KEY NO. 5—MERCHANDISING

Your place of business should have an attractive, well-kept look, both outside and inside. Do not be afraid to appear prosperous. I do not believe that any business should ever apologize for making money. Generally speaking, not only will a customer buy to better advantage from a prosperous business man, but he also will be better satisfied and get better service.

Get your goods on display where people can see them. It is claimed that in stores that do not make good use of their displays 30% of the people entering the store buy just one item. We all know of the tremendous development of the super markets in the last decade. The main reasons for this growth are the large, bright stores and making the best possible use of display space.

KEY NO. 6—SALES

Other factors being equal, the profit any business makes is tied very directly with sales volume. Most people in business will admit this, but too many give only lip service to it. We must train ourselves to be really sales and profit conscious.

I am tremendously optimistic about the future, especially the long-term future. Canada is the world's most rapidly growing nation. I believe it has been forecast that population will increase from approximately 16 to 17 million today to 25 million by 1980.

You hear feed dealers say that because of the tremendous expansion and trend toward very large customers in the feed business today, the retail feed man is going to pass out of the picture. That, to me, is a defeatist's attitude and is a statement that should never be made by any feed dealer. Furthermore, I sincerely believe that for the aggressive, alert retail feed dealer, the future never looked brighter.

I think that business will become more and more competitive, but keen competition should not scare anyone. Each and everyone of us will get only the volume of business we deserve.

Here are two important fundamentals of sales that are often overlooked:

(1) Any business must always be after new customers just to stand still. Surveys show that the average product loses 12% of its customers annually.

(2) The fact that your business is highly successful is no assurance that you will be in the same relative position five to ten years from today. Your relative position and how successful you will be in the future will depend on what you do in the future.

Ideas—Without new ideas continually coming into a business, it just can't continue to be successful. It just doesn't do to watch what our competitors are doing and follow them. There is a tremendous premium in getting these ideas first.

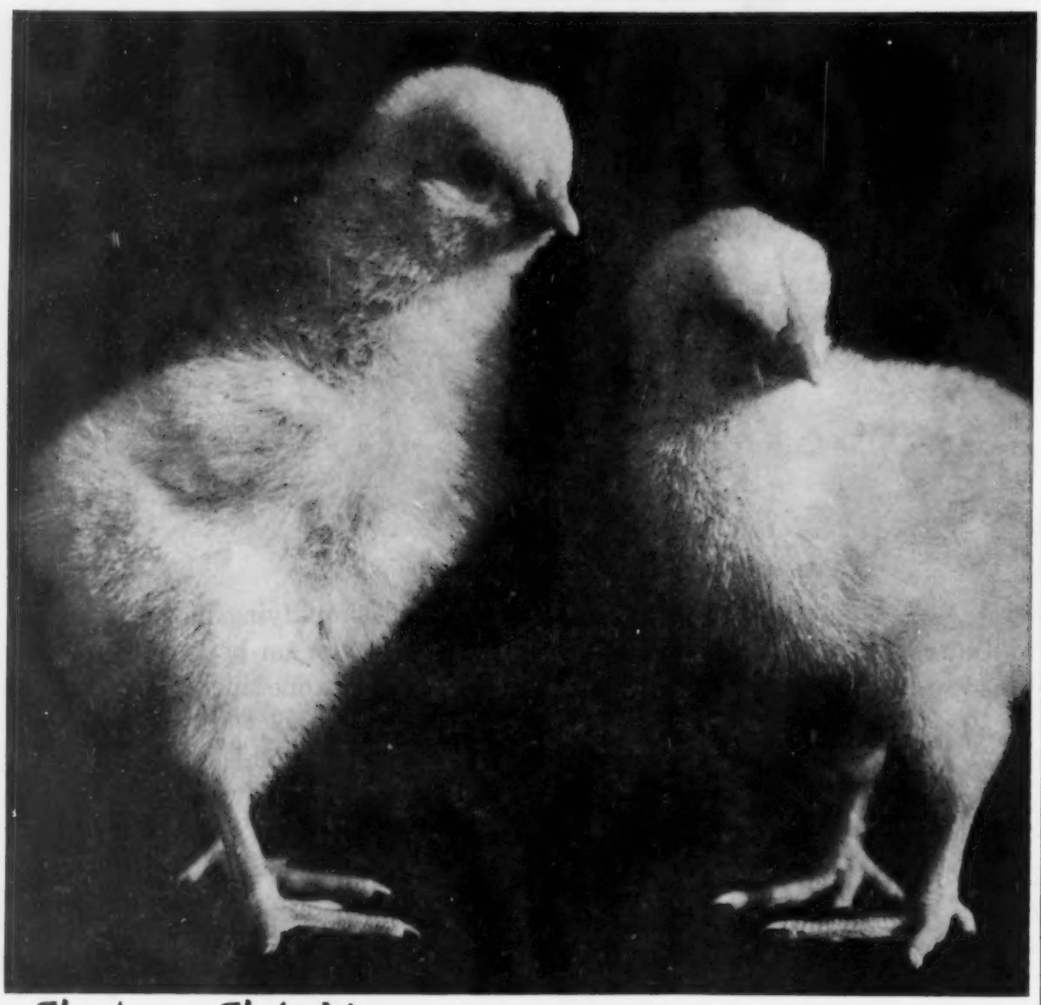
Salesmanship—The day of high-pressure selling is gone. I do not believe that long-term, high-pressure selling or over-selling ever paid off. Sure, high-pressure selling will make you a quick sale sometimes, but it doesn't build sales day in and day out.

In place of high-pressure selling the trend this past decade has been toward service selling. The emphasis now is on personnel, well-trained and able to help customers do a better job and get better results with their poultry and livestock. We must help our customers make a profit.

Face-to-face selling—I believe it is becoming more and more important that retail feed people have a man or men on the road.

One of our dealers, for a number of years, ran from 250 to 400 bags a month in sales of our feed. A year ago he made two changes: (1) He switched to small bulk operation (this was secondary) and (2) our man talked him into calling on customers and prospective customers. The result: In less than a year his volume had reached from 2,000 to 2,500 bags a month.

Make non-sales personnel sales conscious—A great deal can be achieved in increasing sales simply by making what is referred to as non-sales personnel really sales conscious. When I think of non-sales personnel in our company, I think of the girls on the switchboard (the first contact with the customer), order desk personnel, plant shipping



They're on Their Way . . . and, to a great degree, their future is in your hands, because poultry raisers look to you, their dealer, to guide them along the road to greater profits.

One of today's most effective poultry health products is Specifide's MYCIN-MIX, the *different* antibiotic-vitamin blend, specifically created to:

1. Get healthy chicks off to a fast start and *keep* them healthy.
2. Provide quick, sure medication for treatment of disease and stress conditions.

Sick birds are usually feverish and thirsty, and will drink when they won't eat. Therefore, MYCIN-MIX, being water-dispersible, offers reliable insurance against excessive death losses when disease strikes.

Even though your good feeds are powerless to prevent death losses from disease, they *may* take the blame. So . . . to protect the reputation of your feeds . . . to make certain that your customers have every chance of making money with poultry . . . put them on the MYCIN-MIX program right from the start.

Remember . . . your business will be no better than your service program. MYCIN-MIX should be a vital part of that program.

Ask your jobber about MYCIN-MIX or write . . . now . . . direct to us.

MYCIN MIX FOR SWINE

To get pigs off to a faster start towards earlier, more profitable maturity, there's nothing like MYCIN MIX, Specifide's vitamin-antibiotic blend, especially formulated to:

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Help control feed costs.
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America's Fastest-Growing Farmaceutical House

GIVE HIM ADVICE HE'LL APPRECIATE

Remind him to order Morton T-M Salt. See page 45.

personnel, etc. In your business, non-sales personnel may be the girl who answers the phone, your truck drivers, men in the mill.

Sales forecasting and budgeting—I am convinced that both sales forecasting and budgeting are here to stay. Too many businesses are operated on a day-to-day basis without sufficient planning. One of the biggest single advantages in sales forecasting and budgeting is that it makes you do some very serious thinking and planning about your business, both short term and long term.

Now, before I leave sales, let me emphasize again the need for everybody to become really sales conscious. In selling, it is the total effort that counts.

KEY NO. 7—PEOPLE, YOUR EMPLOYEES

Too often, in too many businesses, there isn't enough thought given to the problems, the welfare and the development of employees. It seems to me there are three important factors involved here: (1) Selection, (2) training and (3) motivation. It is wrong to think that so long as we do a good job of selection the rest will take care of itself.

Our employees, I am convinced, are the most important single factor in any business. A business can grow and develop only as it develops its men. Really, our main problem in business is men not products.

There are probably four major errors committed with employees:

- Failure on the part of management to give the employee the feeling of importance.
- Failure on the part of management to delegate authority.
- Failure on the part of management to encourage employees to bring in new ideas.
- Failure on the part of management to train employees to be profit-conscious.

There is need for creating an atmosphere where people like to work and where there is a minimum of petty jealousy and back biting. The object should be that your place of business is referred to by your employees as a good place to work. A group of happy employees will do a much better job.

Simplified Mash Test Shows Cost Reduction

WOOSTER, OHIO — Test results show broilers performed well with a simplified mash costing $4.50 ton less than a complete mash commonly used, according to Dr. E. C. Naber, poultry scientist at the Ohio Agricultural Experiment Station. The simpler mash reduced feed costs for raising broilers by 6%, he said.

Although growth and feed conversion were a little better with the complete broiler-finisher, the reduction in cost by the simplified mash more than compensated for the slightly poorer performance of the broilers, Dr. Naber reported. More tests are planned before recommendations will be made.

RETIRED BROKER DIES

MEMPHIS, TENN. — Otis A. McFall, 74, retired commodities and securities broker, died Feb. 27, at Baptist Hospital here. Mr. McFall, who retired last November as manager of E. F. Hutton & Co.'s Memphis office, suffered a stroke before his admission to the hospital.

Morea Distributors Named in 4 States

NEW YORK — Four new mixer-distributors have been named to introduce Morea liquid livestock feed to the farm areas they serve in Indiana, Michigan, Mississippi and Tennessee, U. S. Industrial Chemicals Co., announced here this week.

Farmers in central Indiana will be supplied with Morea supplement by the Kokomo (Ind.) Grain & Feed Co. Another Indiana firm, Niemeyer Feed & Fertilizer Co., Crown Point, will mix and distribute the liquid feed in northwestern Indiana.

In Michigan, Plant Food Service, Inc., St. Johns, is the first mixer-distributor in that state. It will sell to dairy farmers, cattlemen and sheep producers in a 14-county area of central Michigan.

Mississippi and Tennessee livestock farmers also will be introduced to the new liquid feed. DeSoto Chemical & Supply Co., Nesbit, will supply a five-county area in northwestern Mississippi and southwestern Tennessee which they now serve with their fertilizer business.

FIRM MOVES OFFICES

MINNEAPOLIS—Horton-Earl Co., Minneapolis feed ingredients firm, has moved its offices to 6127 Excelsior Boulevard, Minneapolis 16, according to a recent announcement. The new telephone number is WEst 9-0406.

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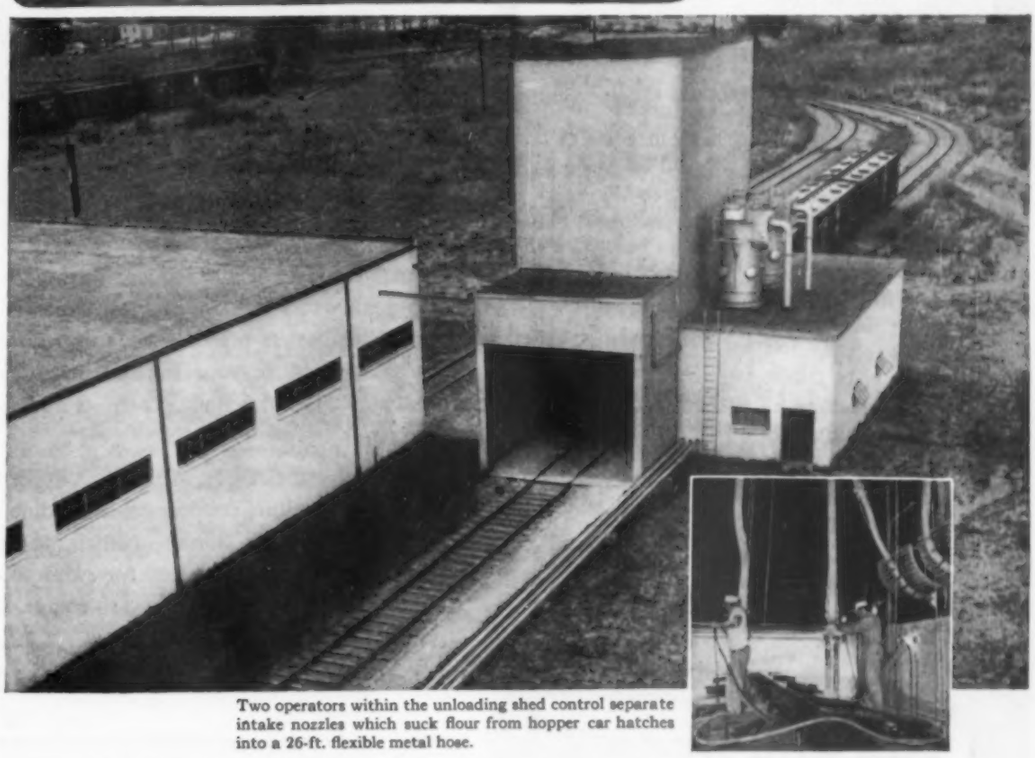

Two operators within the unloading shed control separate intake nozzles which suck flour from hopper car hatches into a 26-ft. flexible metal hose.

Flexibility of FULLER Pneumatic Conveying Systems Makes Problem Plant Site Practical For General Mills

The proposed site of a new General Mills flour blending and packaging plant in Louisville, Ky. seemed impractical to mill engineers because of the site's long, narrow shape. Flour, delivered at a dead-end rail siding, would have to be conveyed over unusually long distances—400 feet from unloading point to storage bins.

By incorporating Fuller Airveyor® pneumatic conveying systems in the plant design, General Mills has overcome these disadvantages and has completed one of the country's most modern bulk flour handling plants.

At the new, highly-automated plant, Fuller Airveyors unload Airslide® or hopper cars of bulk flour at 40 tons an hour, flowing it 400 feet to a series of 18 silos. In a completely integrated system, other Fuller Airveyors deliver ingredients for blending, weighing, proportioning and bagging operations. The compact, 5-inch pneumatic pipelines twist and turn easily through what would be cramped or impossible quarters for other methods of conveying. Self-cleaning Airveyors, containing few moving parts, practically eliminate maintenance and industrial hazards.

Production speed, flexibility, sanitation, processing accuracy, push-button control of an entire plant—are just some of the advantages of Fuller pneumatic bulk handling systems realized at General Mills' new Louisville plant. Similar advantages can apply to old plants modernized with the help of Fuller engineering specialists. Write or phone today outlining your problem. Fuller will gladly furnish additional information with appropriate recommendations. 1187 A-269

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Farm and Feed Salt NEWS

'59 forecast: demand for free-choice salt to increase!

Many well-known animal nutritionists, noting a growing awareness among farmers of the need for salt and minerals in healthy livestock, predict an increased demand for free-choice salt. Retail outlets can profit from this continuing trend by handling the popular Sterling Farm Salt products for resale.

1. Sterling Blusalt—salt plus trace minerals needed for good growth and reproduction. A profitable item, in 100 and 50-lb. bags, 50-lb. blocks and 4-lb. Liks. Look for fast Blusalt block sales in particular. They're ideal for feeding salt and trace minerals free-choice on pasture.

2. Sterling Green' salt—trace-mineral salt plus 10% phenothiazine for controlling certain internal parasites in livestock. In 100-lb. bags, and 25-lb. bags with handles for easy carrying. Green-'salt is sure to be popular with customers who raise farm flocks of sheep.

3. Sterling Granulated Salt—high-quality salt for free-choice feeding and grist mixing. In 100-and 50-lb. bags. Also pressed into 50-lb. blocks and 4-lb. Liks —plain, iodized and sulfurized.

Did you know?

- The College of Veterinary Medicine at Colorado State University reports that 4% salt in a total sheep ration prevents urinary calculi by making the animals drink more water.
- Phenomenal growth in livestock and poultry production is forecast for the coming decade. There'll be a need for 45 million laying hens every year and about 125 million broilers. Also needed will be 3 million extra milking cows . . . 5 million extra beef cattle . . . and 10 million extra hogs.

How to reduce costs of special production runs

Today's livestock and poultry producers are demanding a greater variety of special feeds (calf starters, pre-starters, broiler finishers, etc.). The extra expense incurred by these special production runs cannot be eliminated entirely. But you can help keep it to a minimum by using a quality Sterling Blusalt product in place of plain salt and separate trace minerals.

Formulated especially for feed mixing, Sterling Blusalt products *combine* high-quality salt with seven trace minerals in scientifically derived proportions. Blusalt thus provides you with two important economies. First, you can greatly reduce your mineral inventory. Second, you can speed feed production, because Blusalt permits adding salt and trace minerals *in one operation.*

For all livestock feeds, use Sterling Supermix Blusalt—salt plus manganese iron, sulfate sulfur, copper, cobalt, iodine and zinc. In poultry feeds, mix Sterling Gold Bond Blusalt—containing *extra manganese* to guard against leg weakness in poultry. And for swine feeds, use Sterling Swine Supermix Blusalt, fortified with *extra zinc* to counteract parakeratosis.

Guaranteed analyses and mixing recommendations for these Sterling Blusalt products are available free of charge from International Salt Company.

Expert service with your salt

The comprehensive services of International Salt Company's Animal Nutrition Department are available to you at any time, free of charge. This department, located in Watkins Glen, New York, does continuing research into the proper use of salt and trace minerals in modern livestock and poultry feeding programs. It's *your department* to consult at any time for advice on mixing or feed-formula problems, and for information on any of the Sterling Salt products.

INTERNATIONAL SALT COMPANY, INC., SCRANTON, PA.

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Buffalo, N. Y.	Detroit, Mich.	New York, N. Y.	St. Louis, Mo.

STERLING SALT

MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC.

S. D. Researchers Report on Cattle Feeding Studies

BROOKINGS, S. D. — "There is considerable difference in the amount of feeding value received from corn silage stored in an upright silo and in that stored in a pile on the ground," commented Prof. W. C. McCone, associate husbandman, South Dakota State College Agricultural Experiment Station, in summarizing results of a two-year study on silage losses. He spoke to over 600 farmers, ranchers and others attending the college's annual beef research field day activities. Prof. McCone said cattle consumed 87% of the total amount stored in the upright silo at filling time, while only 54% of the silage stored on the ground could be recovered. There was a 98% recovery of silage stored in glass lined, gas tight silos.

Progress reports on about half a dozen other projects also were presented. One of the most important concerned an experiment that will determine protein and energy requirements for beef cattle. The first part deals with the effect of rations using varying amounts of alfalfa and prairie hay on wintering and the subsequent performance of cattle. Varying proportions of the two types of feed are being used. Rations range from one of prairie hay to one containing 25% prairie hay and 75% alfalfa. All rations include oats.

According to Dr. L. B. Embry, experiment station nutritionist, the restriction of protein did reduce winter gains. But calves put on full feed, following the winter period, gained faster than those receiving higher amounts of protein during the winter. Dr. Embry pointed out that these same calves produced lower grading carcasses with a smaller rib eye and less marbling than those fed normal amounts of protein.

A second part of the experiment dealing with the effects of protein and energy restriction on winter feeding was explained by M. A. Hoelscher, a graduate assistant. Mr. Hoelscher said the average daily gain increased in each case as the protein level was increased. This trend was reversed as the animals ate less feed.

"Restricting protein and energy has also had a rather pronounced effect on growth and general appearance of these calves," he said. "When just the feed intake was restricted, the calves made up for the loss in winter growth after they had been on summer pasture and had spent 107 days in the feed lot." He also stated that it was more economical to restrict gain by reducing feed intake than by feeding a lower level of protein.

The effects of these treatments on carcass composition will be studied after the animals are slaughtered.

In another experiment, intended to determine the effect re-implanting steers with stilbestrol would have during prolonged fattening periods, it was found that steers implanted a second time with 36 mg. of diethylstilbestrol 112 days after the first implant gained .14 lb. more a day than steers implanted only at the beginning of the trial. The result was a 31-lb. increase in gain for steers kept on feed for 220-234 days.

ADOPTS GRAIN BANK

ROSE HILL, IOWA—The Rose Hill Elevator Co., started here about five years ago, has adopted a grain bank plan as its latest service. This system allows the farmer to send in enough grain at one time to feed his hogs, and the properly-mixed complete feed is delivered to the farm fresh every few days during the feeding period.

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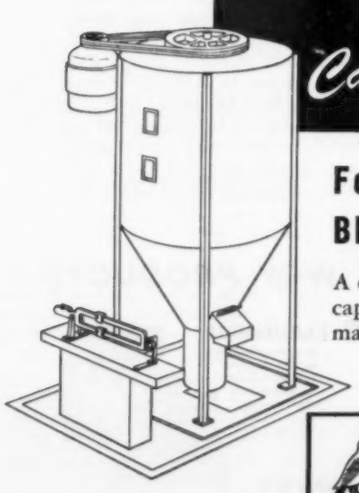

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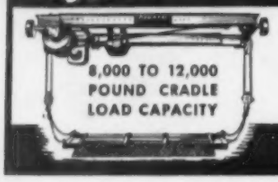

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2. **Custom Feed Milling**—a series of five articles—by Al P. Nelson, Feedstuffs special writer **50c**
3. **Mobile Feed Milling**—a series of five articles—by Al P. Nelson **50c**
4. **Feed Industry Research**—by Dr. H. E. Bechtel, General Mills, Inc. **20c**
5. **Highlights of the Past 50 Years in Swine Nutrition and Feeding**—by Dr. L. E. Hanson, University of Minnesota **20c**
6. **Advances in Dairy Cattle Feeding During the Past 50 Years**—by Dr. C. F. Huffman, Michigan State University **20c**
7. **Golden Era of Beef Cattle Feeding**—by Dr. W. M. Beeson, Purdue University **20c**
8. **What Does Vertical Integration Do to Competition for Feed Sales?**—By Dr. M. E. Cravens, Ohio State University **20c**
9. **Amino Acids in Animal Nutrition**—series of five articles by industry, college and government scientists **50c**
10. **Finishing Market Turkeys**—by Dr. J. R. Couch, Texas A&M College **20c**
11. **Feedstuffs' 1958 Analysis Table for Feed Ingredients**—by Charles H. Hubbell **20c**
12. **Protein and Amino Acid Nutrition of the Laying Hen**—by Dr. Hans Fisher, Rutgers University **20c**
13. **Integration . . . and the Feed Industry**—by Dr. G. B. Wood, Oregon State College **20c**

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

March 25—Texas Cage Clinic; Texas A&M College, College Station; chm., Ben Wormeli, Poultry Husbandry Department.

March 26—South Dakota Sheep Field Day; South Dakota State College, College Station, S.D.

April 17—Nebraska Feeders Day, University of Nebraska, Lincoln, Neb.

• • •

March 15-16—Quad States Grain, Feed & Seed Convention; Sheraton Martin Hotel, Sioux City, Iowa; pres., Don Suttie, Corn Belt Supply Co., Inc., 220 S. Chambers St., Sioux City, Iowa.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 20-21—Broiler Industry Conference; Statler Hotel, Dallas, Texas; sponsored by National Broiler Council; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nail, 1304 E. 7th St., Los Angeles.

April 8—Purdue Egg Day; Purdue University, Lafayette, Ind.; sec., David D. Jackson, extension poultryman, Purdue University.

April 12-14—Animal Health Institute, Inc.; Shoreham Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M.

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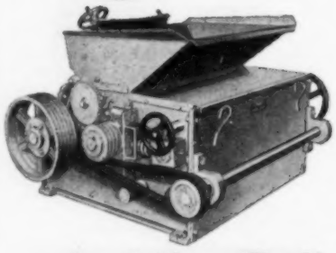

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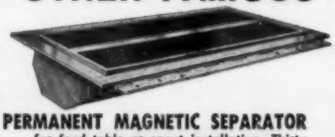

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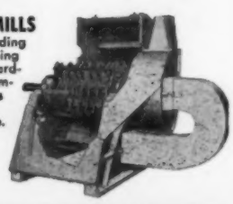

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Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 13-14 — Nebraska Grain & Feed Dealers Assn.; Paxton Hotel, Omaha; sec., Howard W. Elm, Trust Building, Lincoln, Neb.

April 14-15—Poultry and Egg National Board meeting; Edgewater Beach Hotel, Chicago; gen. mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3, Ill.

April 23-25—California Hay, Grain & Feed Dealers Assn.; Fairmont Hotel, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., Sacramento, Cal.

April 23-25—Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth—Texas Grain & Feed Dealers Assn.; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben. E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 24—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Department of Animal Science, Purdue University.

April 27-29—American Association of Feed Microscopists; Hotel Lincoln Douglas, Quincy, Ill.; sec., G. M. Barnhart, Missouri Dept. of Agriculture, Jefferson City, Mo.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 8-10—Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 10-12 — National Cottonseed Products Assn.; Mark Hopkins and Fairmont Hotels, San Francisco; sec., John F. Moloney, 43 N. Cleveland St., Memphis, Tenn.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9—Northeastern Poultry Producers Councill Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe, Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Delmarva Chicken

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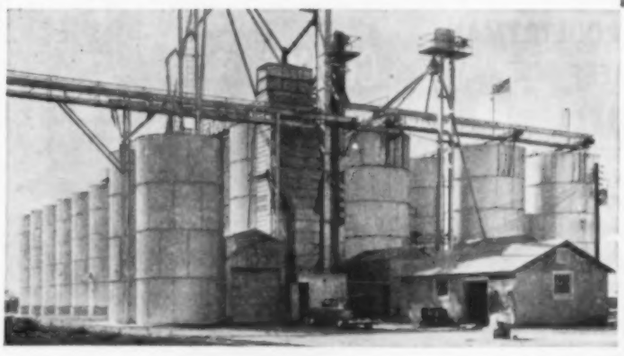

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Festival, Dover, Del.; Dave Green, 1102 S. State St., Dover, Del.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

June 25-27 — Delmarva Chicken Festival; Dover, Delaware; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 21-23—American Poultry Congress and Exposition; Kiel Auditorium, St. Louis, Mo.; exec. sec., Don M. Turnbull, American Poultry and Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 3-8—Feed Microscopy Short Course; Texas Agricultural Experiment Station, College Station; chm., E. E. Brown, Asst. State Chemist.

Aug. 4-7 — Poultry Science Assn. (meeting for members and executive committee invited guests only), Iowa State College, Ames; chm., Dr. Robert E. Phillips, poultry department, Iowa State College.

August 7-8—North Carolina Feed Manufacturers Assn.; Ocean Forest Hotel, Myrtle Beach, S.C.; sec.-treas., A. M. Upshaw, Jr., North Carolina Feed Manufacturers Assn., Box 44, Mocksville, N.C.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 16-18—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Sept. 18—College-Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.

Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.

Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

New Feed Mill Opened

LELAND, ILL.—A new feed mill was opened by Bakers Inc., Leland, on the feed manufacturing firm's 27th anniversary. The mill was built to grind grain and hay; shell, crimp and crack corn; hull and roll oats, and mix and pellet complete rations. Machines installed can turn out complete pelleted rations at the rate of 12 tons an hour, a company spokesman said.

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W. Cosby Hodges

HEADS COMMITTEE — W. Cosby Hodges, president of the Cosby-Hodges Milling Co., Birmingham, Ala., has been appointed chairman of the agricultural committee of the Alabama Chamber of Commerce, it has been announced by Jack W. Warner, Tuscaloosa, Ala., Chamber of Commerce president. Cosby-Hodges manufactures Jazz Feeds.

Free-Choice Feeding Data Supplied by Tests

BLACKSBURG, VA. — Pigs fed free choice do not do a good job of balancing their ration, nor do they gain faster than those fed mixed complete rations, according to scientists at the Virginia Polytechnic Institute Agricultural Experiment Station.

Reporting on recent swine tests, Dr. C. C. Brooks and Prof. H. R. Thomas of the station's animal husbandry department, said feeding trace mineral salt did not increase rate of gain or feed efficiency, but did result in a higher intake of protein with free-choice feeding. Soybean oil meal produced faster gains than peanut oil meal, while a mixed supplement gave more rapid gains than soybean oil meal.

In a companion test, the scientists found that apparently trace minerals did not benefit pigs on a practical ration, nor did they appear to influence protein needs. Test data also indicated that pigs weighing 40 lb. need a 14% ration, pigs weighing 75 lb. should not receive less than 13% protein and that some protein, in addition to corn and alfalfa meal, is needed by a 150-lb. pig.

CALIFORNIA STORE PURCHASED

LAKEPORT, CAL. — Frank and Jim Summers, operators of the Lakeport (Cal.) Home and Garden Store, have purchased the Farmer's Feed Store on Highway 29 South and will operate it as Lakeport Feed and Seed. The highway store was owned by J. M. Smith, who operated it until recently. The new owners will conduct a feed and seed business at the highway location and will continue operation of their High St. store which they purchased last year.

G.L.F. Offers Four Game Bird Feeds

ITHACA, N. Y.—The Cooperative G.L.F. Exchange, Inc., is making available as regular items four game bird feeds. This was pointed out recently in the cooperative's publication, G.L.F. Week.

The feeds will be known as G.L.F. Upland Game Starter Unscreened Crumbles, G.L.F. Upland Game Grower Formulets, G.L.F. Upland Game Finisher and G.L.F. Medicated Upland Game Breeder Formula.

At the present time, officials said, these feeds are being recommended specifically for pheasants.

OREGON FIRM SOLD

REDMOND, ORE.—W. E. Frazier, Frazier Feed Co., Culver, has purchased the Lasley Feed Co. here from Harvey and Ed Lasley. The business will be taken over in June by Mr. Frazier's son, Robert, who is now with the U.S. Army.

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IDEAS TO HELP YOUR CUSTOMERS

Tips for Dairyman

The dairyman can keep his cows cleaner in a loose housing setup if he throws the manure droppings off to one side of the loafing area each morning.

A. H. Schulz, an extension agricultural engineer at North Dakota Agricultural College, says this practice will not only reduce the amount of straw needed but will also make the cows more comfortable by removing frozen clods.

He suggests that the dairyman bed the loafing area with straw in the evening when the cows are ready to lie down because bedding in the morning permits the cows to tramp over the new straw all day, getting it dirty by nightfall.

The location of the water supply also has a bearing on how dirty or clean the bedding is. Mr. Schulz advises that the waterer be located in a protected outside location, along an outside wall or near the entrance so the cows don't have to travel over the bedded area to get to the water.

Some farmers are finding success with a "do-it-yourself" bedding arrangement. They simply cut and dump whole bales of straw and let the cows do the spreading.

◆

Colostrum for Scours

Colostrum, the first milk produced by a cow after a calf is born, is the best control of white scours, the violent diarrhea which threatens the lives of newborn calves, says Dr. Paul J. Glantz, bacteriologist at the Agricultural Experiment Station, Pennsylvania State University.

Antibiotics must be administered almost as soon as a calf is born, Dr. Glantz advises, if the dosage is to be most effective against the disease that appears within 48 hours of birth. He says that dairymen have found this treatment, accompanied by the immediate use of colostrum, very helpful, but that it does not take the place of clean and comfortable housing.

Scours infection is started before the calf's digestive tract has become accustomed to any kind of food, Dr. Glantz explains. At this time the organism causing the disease passes more easily from the intestine into the blood of the calf.

◆

Debeaking and Eating

Experimental evidence shows that debeaked chickens waste considerably less feed than those not debeaked, and that the amount of feed wasted is largely determined by the height of the feeder and the depth of the feed in the hopper.

In tests at Rutgers University, birds not debeaked wasted 4% of their feed, while debeaked birds wasted only 1% when eating from a hopper with its edge even with the height of the birds' backs. When the feeder was lowered a few inches and three fourths full of feed wastage jumped to 20% for birds with whole beaks, but there was only a slight increase for debeaked birds.

◆

Grit Beneficial

The use of grit in the poultry diet may help a producer maintain a healthier poultry flock, according to J. B. Ward, poultryman at Michigan State University. He says poultry not being fed grit generally have some digestive disturbances, lack of appetite and impaction of the crop and gizzard as they grow older.

Mr. Ward points out that grit is retained in the bird's gizzard and acts as a grinding agent, aiding the gizzard in the physical breakdown of food particles.

According to Mr. Ward, grit is especially important for laying hens

*We certainly won't attempt to explain the alarming growth rate that Topsy seemed to achieve . . . it's enough to say, "She just grew". To feed users, however, it isn't this simple. "Growth" is without question the most important element in livestock feeding. It is a constant source of study by manufacturers, colleges, experimental stations to arrive at the perfect feed balance to assure greater growth at a lower cost per pound.

These studies have revealed stimulating Unidentified Growth Factors that are found only in a meat and bone meal diet. They also show that 50% meat and bone meal provides: 32 times the calcium, 6 times the phosphorous, 2 times the riboflavin and niacin, 10 times the fat, and 1.14 times the protein found in substitute vegetable products.

Because of this greater knowledge, more and more feed manufacturers and millers are turning to meat and bone meal as their choice for protein in the practical balanced diet. It is easy to use, it is economical, it assures the right balance of proteins, and highest productivity. The feeder knows that this adds up to better conversion, lower cost per pound of weight gain and INCREASED GROWTH RATE.

Because the demand for feed with meat and bone meal is ever-increasing the wise feed manufacturer is switching to this source for protein. He gets better prices and more sales because they do more for the feeder . . . giving him greater profits through better results.

Whether you are large or small, you can use meat and bone meal easily. The mixing is simple and economical, since the meat meal is received pre-ground and ready to add, with other ingredients, to the feed.

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Wayne E. Tjossem

DIVISION MANAGER—The Ralston Purina Co., St. Louis, has formed a special soy products division as part of its soybean division with Wayne E. Tjossem as manager, an announcement from Eldred A. Cayce, Purina vice president, reported. Mr. Tjossem came to Purina from the chemurgy division, Central Soya Co., Inc., Chicago, formerly a division of the Glidden Co., where he was assistant to the division's vice president. Earlier he was associated with Diamond Crystal Salt Co. for 17 years. In his new post, Mr. Tjossem will assume over-all marketing responsibility for all Purina soy products other than soybean oil and meal.

which produce much better when grit is in their diet.

Mr. Ward says insoluble materials such as granite or feldspar make good grit and recommends these minerals be fed alongside oyster shell or limestone.

◆

Silage Mold Prevention

It's possible to keep silage from getting moldy—and these precautions have been listed by Prof. Merritt Wright, department of bacteriology, Ontario Agricultural College, as helps for mold growth prevention (based on the fact that mold will grow only when air is present):

1. Have air-tight walls and doors on the silo.
2. Harvest the crop at the right time so that it contains enough moisture to pack well and keep out air.
3. Pack the silage so that it will settle tightly against the walls.
4. If the crop is too mature or has been frozen, cut it into shorter pieces. If the crop is very dry, water may be added to make packing easier.

MEAT EATING UP

MONTREAL—Domestic consumption of meat in Canada by next year will be more than double that of 25 years ago, according to a prediction made here by Dr. L. E. Drayton, economics division, Canada Department of Agriculture. The agricultural official from Ottawa said per capita consumption in Canada this year would reach 145 lb. meat, and close to 50% of it would be beef.

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New Drug Effective In Swine Dysentery

GUELPH, ONT.—Field trials conducted by the Ontario Veterinary College here indicate that one of the new furacin group of drugs may be effective in controlling vibrionic dysentery outbreaks in swine herds, it has been announced.

The report said the disease is troublesome in some swine herds from time to time, and it may affect swine of all ages. Losses can be as high as 25%, and it may re-occur frequently in a herd. According to the report, the disease is spread by bringing new animals into the herd from an infected farm or sale. Losses from the disease can be minimized if new additions to the herd are isolated for at least two weeks after purchase.

It was pointed out by the report that early diagnosis of the disease by a veterinarian is essential if the new treatment is to be used effectively.

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4.3	215	12'10"
5.8	290	15' 6"
7.3	365	18' 2"
6 FT.—SIDE DRAW		
3.8	188	14' 8"
5.3	264	17' 4"
6.8	339	20' 0"
8.3	415	22' 8"
9 FT.—CENTER DRAW		
11.0	552	15'11"
14.4	718	18' 7"
17.8	888	21' 3"
21.1	1055	23'11"
24.5	1225	26' 6"
9 FT.—SIDE DRAW		
14.4	722	22'11"
17.8	890	25' 7"
21.1	1058	28' 3"
24.5	1226	30'11"
28.0	1395	33' 7"

BS&B BULK FEED TANKS

Feeders Grain & Supply, Inc., after serving feeders and farmers in the Bowling Green, Mo., area for 20 years, recently expanded their operations with a new custom grinding and bulk feed plant.

Reasons: To increase overall tonnage by offering feed in bulk. To do custom grinding, mixing, pelletizing and shelling. To operate more profitably by eliminating labor and materials costs involved in bagging.

Equipment in the new plant includes a battery of eight new BS&B Bulk Feed Tanks, with a total capacity of 57.4 tons. These tanks are used for storing grain and feed concentrates, and for grinding, mixing, pelletizing and shelling operations.

Company President Ervin F. Henderson says, "Thanks to this new bulk feed and custom grinding operation, our volume of business *doubled* before we had even advertised the opening of the plant!"

To fortify his growing bulk feed business, Mr. Henderson handles BS&B Bulk Feed Tanks in a range of sizes that will fit any customer requirement.

You, too, can build a more profitable feed business by converting to bulk operations with the help of BS&B Bulk Feed Tanks. For complete information, contact the BS&B Man serving your area . . . or write to us direct.

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Californians Test Fly and Droppings Control Methods

BERKELEY, CAL. — Experiments are being conducted on California ranches to find out how to fight the common housefly on poultry ranches while processing droppings for fertilizer.

The 50,000-bird Zentler poultry ranch at Chino is the site of experiments on dry manure by Richard Griffin, Los Angeles County farm advisor, in cooperation with Walter Zentler, former California Farm Bureau Federation poultry department chairman.

Mr. Zentler has installed an endless plastic belt under one row of his poultry cages. Droppings fall on the belt but do not stick to the plastic. Once a week the belt is turned over a drum at the end of the row where a metal scraper cleans it. Although the cost will vary, Mr. Zentler figures it runs about 80¢ a bird to install. He is not satisfied, however, that this is the practical answer, for there is the question of lasting quality of the plastic belt and its feasibility based on replacement costs.

Mr. Griffin has been experimenting also with a poultry manure dryer, which is now under construction at Davis. This takes the form of a U-shaped trough, 6 ft. wide, 100 ft. long and about 3 ft. deep. In use, it would be loaded with poultry droppings to a depth of about a foot.

The trough will have a plastic cover to keep flies out and to take advantage of the heat of the sun for drying. A fan will keep the air over the fertilizer moving, and a cultivator running on a track and powered by an electric motor will stir the manure. While this is strictly in the experimental stage, a smaller model in operation last year showed considerable promise. Mr. Griffin estimated that this operation will dry the fertilizer at a cost of about 3¢ cu. ft., but admitted that until it has been tried for some time, this figure is little more than a guess.

Another experiment being carried on by Mr. Griffin at the Zentler ranch, and also at the William Woods place, deals with composting. Various mechanical attempts have convinced him that composting with machinery is impractical from a financial standpoint.

His present experiments deal with a mixture of poultry manure and flower cuttings, which, if worked out successfully, could be a boon both to poultrymen and flower growers. Some of the big flower producers pay as much as $60 weekly to have their cuttings hauled away, Mr. Griffin says. He is currently checking his third batch in this experiment in an attempt to find the best combination of manure and cuttings to break down quickly.

Experiments are being continued at the Eimers and Shinn poultry ranch, Anaheim, in the use of a mobile propane burner to keep poultry droppings dry and to reduce or destroy fly larvae. Some changes have been made, both in construction and in use of the original rig since its introduction about a year ago, according to Jack Shinn.

Four Burners on Each Side

Two more burners have been added, making a total of four on each side. The grader blades and forks for turning and leveling the droppings are now used only for the first six weeks after a complete cleanout under the cages. This gives the droppings an even and thoroughly dry base. The burners are used daily, Mr. Shinn said, to do away with stray feathers and to keep the droppings dry. The burners are pulled up and down the rows of cages with a powered cart at a speed of about 3 mph.

Mr. Eimers and Mr. Shinn have 8,500 layers, with two and three birds in each of the 10-inch cages. This normally makes for wet droppings, a natural fly hazard. However, since using the burners, they no longer use sprays overhead, and the ceilings, light globes and wiring show no evidence of flies, Mr. Shinn said.

"We're still experimenting," Mr. Shinn said, "but I believe we are on the right track."

DROPPINGS CLEANER — Walter Zentler demonstrates use of endless plastic belt under poultry cages installed as an experiment on the family poultry ranch near Chino, Cal. Droppings fall on belt and are cleaned weekly by cranking drum at end of tow. This is one of numerous experiments in fly control Mr. Zentler is making in cooperation with Richard Griffin, Los Angeles County farm advisor.

API to Study Coccidia Under Cyanamid Grant

NEW YORK—A grant-in-aid from American Cyanamid Co., New York, has been accepted by Alabama Polytechnic Institute to investigate poultry diseases of economic importance to poultrymen.

According to Dr. S. A. Edgar, poultry pathologist of the API Agricultural Experiment Station, research studies under the Cyanamid grant will be involved largely with Arzene arsenosobenzene and its effectiveness against two species of intestinal coccidia—Eimeria maxima and Eimeria acervulina.

While it is known that coccidiosis is caused less frequently by these two organisms than by the more common species of coccidia, they are becoming increasingly troublesome. In work completed by Dr. Edgar, Arzene has shown high activity against these two species, according to a Cyanamid report.

Under a previous Cyanamid grant, Dr. Edgar completed an extensive study of fowl pox vaccination and immunity with broilers and caged layers.

COMMENDED BY RED CROSS

ST. ALBANS, VT.—The St. Albans Grain Co. has been commended by American Red cross officials here for allowing time off for its employees to donate blood recently, when between 25 and 30 donors were recruited to get some 16 pints for a man undergoing surgery in a Boston hospital.

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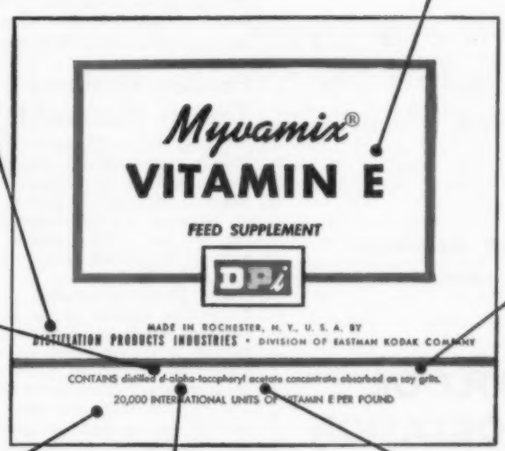
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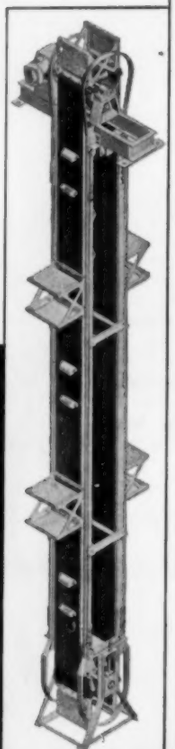

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FARM FORUM—This picture was taken during the 12th annual Southern Farm Forum held at New Orleans under the sponsorship of the agricultural committee of the Chamber of Commerce of the New Orleans area. Registrants were from 12 southern states, and represented some 25 phases of the agricultural industry. Those in the photograph are (left to right, front row): John A. Berkley, Diamond Gardner Corp., Chicago; Miss Jo Ann Hyde, farm forum queen, Robert, La., and Dr. A. William Jasper, Poultry & Egg National Board, Chicago. In the back row are: Charles W. Frank, Jr., chairman of the forum; Harley O. Hamilton, Diamond Gardner Corp., Atlanta, Ga., and Floyd Porter, Fleming & Sons, Inc., Dallas.

Poultry Business Trends Discussed

TOPSFIELD, MASS. — "Current Trends in the Poultry Business" was the subject of an address given by Robert L. Bickford, assistant director of research for Wirthmore Feeds, Inc., at the recent annual meeting here of the Essex County Cooperative Farming Assn.

Mr. Bickford pointed out that farms are getting larger, more specialized and more efficient. This change is taking place, he said, because the margin of profit per unit is decreasing, fixed costs are rising and modern marketing practices favor the larger farm. An increase in the size of building being constructed, and at the same time, an increase in the number of birds housed per 100 sq. ft. of floor space are both becoming more noticeable, he said. The growing interest in slatted or partially slatted floors and some of the newer improvements in ventilation systems were mentioned by the speakers.

In discussing new developments in feeding, Mr. Bickford said that controlled feeding of replacements during the growing period is on the increase. Limiting the daily intake on a poundage basis continues to be the most economical practice, he asserted, but restricting nutrient intake by free choice feeding of a bulky ration is also being tried, with the hope that the feeding operation may be simplified.

"Controlled feeding of meat-type breeders during the laying period is being tested experimentally, both in controlled research facilities and in the field," he said. "Preliminary results indicate that this method of feeding may have merit with high energy rations, since many birds tend to over-consume such rations when fed free choice.

"The success of such a program will depend upon whether a practical method of application can be worked out. Complete feeds for layers continue to gain popularity with poultrymen because they are better suited for automation, and they promote more uniform egg quality."

New management practices also were covered by Mr. Bickford. He discussed improved lighting and ventilation systems and the confined rearing of replacements. The most significant development in recent poultry health control improvements, he said, has been the growth of vaccination against coccidiosis for replacement flocks. Farm records-keeping and the latest trends in egg marketing were also discussed.

Sees Dairy Domination By Few, Larger Herds

FT. ATKINSON, WIS.—A prediction that in a few years milk production will be dominated by large dairy farms with investments of $250,000 or more was made here recently by W. D. Knox, editor of Hoard's Dairyman.

"This means tomorrow's dairy farm will not be run by a 'habit' farmer doing what he always did," Mr. Knox told the annual meeting of the Wisconsin Guernsey Breeders Assn. "He will buy his corn and much of his forage and will use all his skills in increasing production."

Mr. Knox pointed out that half of those who were producing milk and cream in the last 15 years are out of business today, while production keeps increasing.

"Looking ahead, there may come a time when only 325,000 herds of 40 cows each, one out of eight now dairying, will produce more milk products than the nation can use," he said. "And, if we go to the 200-cow herds as they have in California, only 58,000 herds will be needed."

John Schoeni, Jr., Heads Oilseed Group

WASHINGTON—John F. Schoeni, Jr., Los Angeles Soap Co., was elected president of the National Institute of Oilseed Products at its three-day meeting held recently at Ojai, Cal.

Much of the meeting was devoted to discussion of the institute's trading rules, which are used throughout the world for trading in copra. European methods of unloading copra were described by Godfrey Beckmann, Beckmann & Jorgenson, Copenhagen. Another speaker was George A. Parks, U.S. Department of Agriculture, who discussed government efforts to increase exports of surplus farm products, particularly fats and oils.

Other officers elected for the coming year are Howard Boone, Cargill, Inc., San Francisco, first vice president; B. T. Rocca, Jr., Pacific Vegetable Oil Corp., San Francisco, second vice president, and L. C. Brooks, Procter & Gamble, Los Angeles, secretary-treasurer.

BROKER HONORED—Albert Hedelund who has been in the grain brokerage business in Omaha for 50 years, receives refreshments at a coffee hour staged by friends, relatives and associates to observe his long service to the grain industry.

Veteran Omaha Grain Broker Honored

OMAHA — A half century in the grain brokerage business was marked recently by Albert Hedelund when he was honored by more than 600 friends, relatives and business associates at a Danish coffee hour. Mr. Hedelund is Omaha's only grain broker now as other grain brokers here closed shop when the big elevators and firms dealing in grain assumed the job of doing their own buying and selling.

Mr. Hedelund recalls the days when grain offices were housed here in the Brandeis Theater building, and it was in 1908, that he started his grain career there as a clerk under John B. Swearingen who founded the present United Grain Co. Upon the owner's death, Mr. Hedelund took over the brokerage business.

It is not unusual for the 72-year-old Mr. Hedelund to put in a 14-hour day. He arrives about 6:30 a.m. to catch the early market openings, answer mail and listen to the news. Mr. Hedelund is on the trading floor each day between 8:30 a.m. and 12:30 p.m.

Mr. Hedelund works alone in his office. He would rather be a combination typist, bookkeeper, receptionist, and broker, than train someone else in a business which takes a lifetime of learning, he said. His only part-time secretary is his wife, Christie. Many Omaha grain men like to do business in Mr. Hedelund's office —this is partly because of the direct contact, and partly because of the white tin box kept full of his wife's famous cookies.

New Equipment

CHICAGO—Prater Pulverizer Co., Chicago, announced recently that equipment was installed by the firm in 51 locations in 10 midwest states and in Oregon during January.

Included were 11 installations in Wisconsin, eight in Ohio, six in Michigan, six in Iowa, seven in Illinois, four in Minnesota, three in Mississippi, three in Missouri and one each in Arkansas, Nebraska and Oregon.

FIRE DAMAGES FIRM

CHARLESTON, S.C.—Fire recently damaged the Maguire Feed & Seed Co. here. An undetermined amount of damage was caused to the interior, as well as the exterior, of the firm. The store has been operated by James H. and Ronald H. Maguire for a number of years.

Hooker Corp. Plans Further Division

NIAGARA FALLS, N.Y.—Further division of Hooker Chemical Corp. is planned, according to an announcement by Thomas E. Moffitt, president. This will be accomplished by forming an autonomous eastern chemical division and by making autonomous the earlier-formed phosphorus division, placing both on the same basis as Hooker's Durez plastics division.

Thomas F. Willers and F. Leonard Bryant, Hooker vice presidents, March 12 will become general managers of the eastern chemical division and the phosphorus division, respectively.

Headquarters for the eastern chemical division will be at Niagara Falls, with plants at Niagara Falls, Montague, Mich., and Columbus, Miss. Phosphorus division headquarters will remain at Jeffersonville, Ind., with plants at Jeffersonville, Columbia, Tenn., Adams, Mass., and Dallas, Texas.

For the time being, Hooker plans no change of status for its Tacoma, Wash., plant and its Canadian subsidiary, Hooker Chemicals, Ltd., North Vancouver, B.C. Hooker wholly owns 12 plants, including the three plants of the Durez plastics division.

Bemis Elects Directors And Vice Presidents

ST. LOUIS—F. G. Bemis, president of Bemis Bro. Bag Co., has announced the election of three new directors and three new vice presidents. The new directors were elected at the recent annual meeting of stockholders held at the company's St. Louis general offices.

Elected directors were A. N. Weeks, vice president and director of production, St. Louis general offices; R. V. Scott, director of eastern operations, New York, and C. W. Akin, director of group 6 operations, Minneapolis.

The new vice presidents were elected at the meeting of the board of directors which followed the stockholders' meeting. Elected officers were T. H. Ashton, director of central operations, Omaha; L. A. Linville, director of western operations, San Mateo, Cal., and H. J. Wehrenbrecht, director of southern operations, New Orleans.

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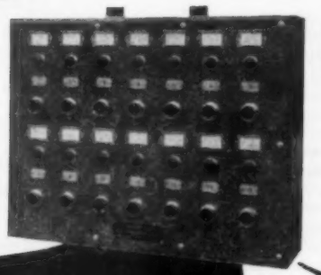

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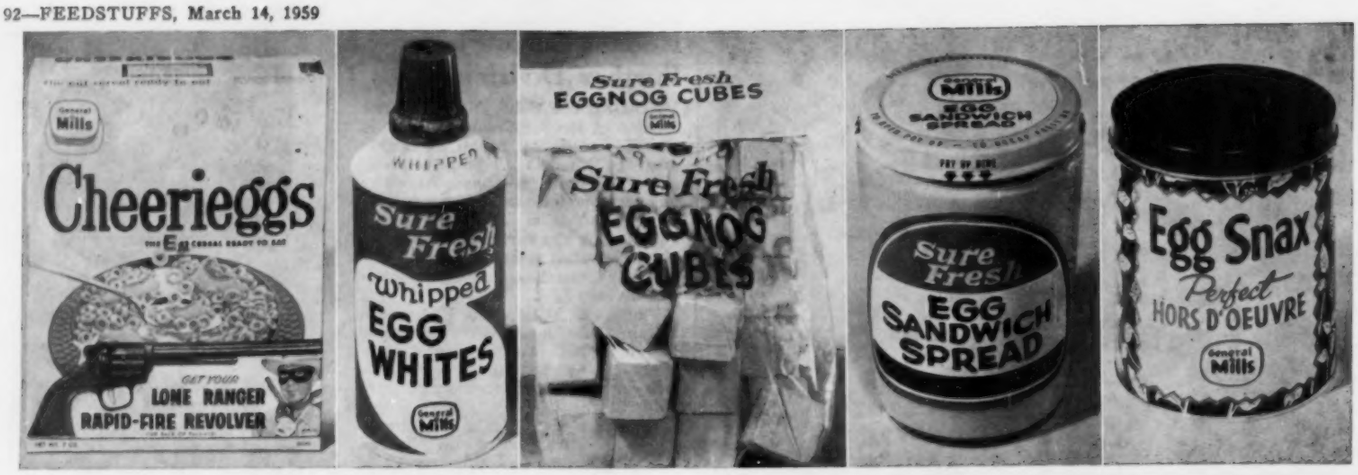

EGG MARKETING—Shown are several "wild blue yonder" ways to boost egg consumption by providing more convenience and variety in egg products. The ideas were among those suggested by R. M. Hendrickson, market manager of poultry feeds for General Mills, Inc., Minneapolis, at the recent Institute of American Poultry Industries Fact-Finding Conference in Kansas City. The "whipped egg whites" come in an aerosol can; the "eggnog cubes" are frozen, and result in eggnogs when dropped in a glass of water and stirred; the "brown and serve eggs" are partially cooked eggs, ready for the oven in plastic or aluminum foil containers, and the frozen "egg bars" consist of a yolk center surrounded by egg whites, and produce fried eggs when sliced and fried. Getting "back down to earth," Mr. Hendrickson suggested more attractive demonstrators and point-of-purchase advertising as a few ideas for bolstering cartoned shell egg sale at the present time. (A complete report on the conference appeared in Feedstuffs Feb. 28, page 4.)

125 Pork Growers At Producers Day For Eastern States

STORRS, CONN.—The Swine Producers Day sponsored by the animal industries department of the University of Connecticut Jan. 31 attracted 125 pork growers from Connecticut, Maine, Massachusetts, New York, Rhode Island and Vermont, representing ownership of 18,655 hogs.

The American Meat Institute film, "The Pig and the Public," opened the morning session, which was geared to meat-type hog production.

Prof. Ellis Pierce of Cornell University, Ithaca, N.Y., shared his views on how to breed and raise desirable market hogs. He emphasized the premium value attached to this well-muscled, non-wasty kind of market hog and the breeding stock which produces them. His talk was followed by the film, "Probing for Profits," which portrayed the method used for determining back-fat thickness in live hogs.

A marketing session featuring "Experience in Marketing Feeder Pigs," with George Bragdon of Scotland, Conn., and Roger Ouellet of North Windham, Conn., was next on the program. Mr. Bragdon said his feeding method was to leave the pigs on their dams until 45 to 50 lb. "in order to get them off to an excellent start at weaning and to preserve the milk fat."

Mr. Ouellet, on the other hand, said he has had most success in marketing some 2,500 feeder pigs annually by weaning at three weeks, pushing the piglets on pelleted creep ration and using anti-anemia shots to ease them by that critical point.

Irving Bercowetz, vice president, Connecticut Packing Co., Bloomfield; Robert Halcomb, manager, Sperry & Barnes Co., New Haven, and William Somerville, vice president, Tobin Packing Co., Albany and Rochester, N.Y., urged the production of lean, meaty hogs for improved cut-out value to the packer-buyer and of greater satisfaction to the producer for both financial and efficiency reasons.

They established that for each 1% additional cut-out value represented in the four primal lean cuts of ham, loin, Boston butt and picnic shoulder, the packer could pay an additional 35¢ cwt. on today's market. Thus, a 200 lb. market hog cutting out 52% would be worth $1.40 more than a similar weight hog that was a bit fatter and cut out a straight 50%.

W. B. Young, dean and director, Connecticut College of Agriculture, extended a welcome to the visitors preceding a buffet-style luncheon served in the meats lab and livestock pavilion.

The afternoon program started with demonstrations using sorting pens, canvas slappers, plywood hurdles and a portable step-type loading ramp relative to the subject of "Handling Hogs From Birth to Market."

Guy Mann, field director, New England Livestock Conservation, Inc., Boston, Mass., showed slides on how to eliminate hog bruises.

Prof. Byron Colby, University of Massachusetts livestock specialist, offered a summary of research conducted there on the "Feeding Value of Cooked and Raw Garbage." His report pointed up the fact that garbage alone, cooked or raw, generally is lacking in certain essential nutrients, namely protein, vitamin D, riboflavin and pantothenic acid. This vitamin deficiency was chiefly at fault in weaned pig scouring and losses, according to Prof. Colby. He recommended a high protein supplement and minerals to offset the deficiencies present in garbage, especially for young and growing shoats and hogs.

Tells of Feeding Potatoes

Ken Parsons, Hadley, Mass., hog producer, told how he supplements garbage feeding and he stressed the value of pasture and forage for brood sows and home-grown corn. He said cull potatoes cooked with garbage proved an inexpensive source of carbohydrates.

Dr. B. W. Pickett, University of Connecticut researcher in the field of artificial insemination, outlined the work done to date, both abroad and in this country, with artificial insemination of swine. The large sperm count and ejaculate from a boar does not lend itself to as extensive dilution as does bovine semen, he said. He noted, however, that its keeping qualities and methods have yet to be enhanced. These problems, along with others, will be mastered technologically, he assured the group, as the need for wider use of artificial insemination in swine becomes prevalent.

Broiler Placements Up 48% in Mississippi

JACKSON, MISS. — Broiler chick placements on Mississippi farms during January, 1959, were up about 48% over the same month in 1958, the Mississippi crop and livestock reporting service has announced.

The announcement was made with a report which showed that commercial broiler production in Mississippi during 1958 was 28% over a year earlier—the largest 1958 percentage increase among the 22 broiler producing states.

Gross income from the sale of broilers during 1958 was $46,872,000, the report said. This compares with a gross of $37,781,000 during 1957. The average price received in the state during 1958 was 17.7¢ lb. liveweight, compared with 18.3¢ lb. the previous year. Average weight for both years was 3.1 lb. at marketing.

Mr. and Mrs. Hugh Lett and sons, J. Howard and William, review their service routes on a map of Daviess, Knox and Martin Counties.

Purina Service Center grows by helping agricultural progress

From the day that Hugh and Ida Lett started a small hatchery on the farm, their business has been dedicated to serving agriculture. On this foundation, they have built one of the most important businesses in Washington, Indiana, serving surrounding Daviess County.

Farming in Daviess County has gained because Lett's Hatchery has introduced broiler growing, "Pig Parlors" and other agricultural advances in the area. Purina Research developments have been carried to rural folks by Lett's Hatchery's three graduate feeding advisors who especially like to work with "Farmers of Tomorrow."

Such service has been rewarding to Lett's Hatchery both in satisfaction and business volume. From their on-the-farm hatchery, volume has grown to an output of between 400,000 and 1,000,000 chicks a year. The volume of Chows has grown fifty-fold.

This is the headquarters building of Lett's Hatchery which has grown from a small store in an old residence.

Lett's Hatchery and The Washington National Bank have worked together in introducing "Pig Parlors" in the county.

Two portable mills travel from Lett's Hatchery to farms in the Washington market. Millman Harold Linneweber and Hatcheryman Harold Dunigan are shown here with the equipment.

PURINA ... YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

GFDNA Regional Meetings Termed 'Highly Successful'

WASHINGTON—"Highly successful" is the way Madison Clement, president, Grain & Feed Dealers National Assn., has described the series of GFDNA regional directors meetings held recently.

Mr. Clement and Alvin Oliver, executive vice president, made an eight-day tour to conduct meetings in Kansas City; Monterey, Cal.; Portland; Minneapolis; Chicago, and Washington. The meetings were held to review programs of the national association and to prepare plans for future coordinated activities, according to a report to members sent out recently by the association.

Presidents and secretaries of affiliated state grain and feed associations met with the directors to confer on state-national policies and programs. At each of the meetings, the results and findings of a Dec. 5-7 executive committee planning session were also reported.

Mr. Clement explained the long-range plans of the national association and the proposed dues schedule adjustments. He said the recommendations involved no change for the minimum dues payments, but that equitable adjustments are recommended for firms with greater investments and volumes of business.

Two of the meetings, Monterey and Kansas City, were reported earlier in Feedstuffs (Jan. 31 and Feb. 7). Highlights of the other four were as follows:

Portland: Discussion involved the storage situation, uniform grain storage agreement rates, negotiating labor contracts, grain sanitation, integration in western agriculture, farm legislation and the uniform grain grades.

Minneapolis: Twenty directors and trade association officials representing the Northwest discussed federal legislation in agriculture, labor and taxation, need of a storage cost study for country elevators, and need of a future commitment from Congress regarding policy of the continued use of private storage facilities before government-owned facilities are utilized. Also discussed were grain inspection, the export subsidy-in-kind program as it relates to the country trade and the activity of the feed people in Minnesota in seeking new legislation for grain bank operation.

Chicago: Twenty-eight directors and trade association officials representing eight states attended to hear reports from the committee to obtain uniform freight rates, reports on the need for research on grain sampling, and a report on ASC-CCC relationships in regard to storage, rates, research and negotiations.

Washington: Four states were represented. The national directors gave unanimous endorsement to the new dues schedule and the proposed program of increased services to national members. The trade session was highlighted by a discussion of the transportation problems, current legislation, the rapidly changing agricultural picture in the East and a discussion of the importance of the national trade rules in everyday trading.

Kenneth S. Brubaker

SUPERINTENDENT — Kenneth S. Brubaker, formerly manager, Lancaster, Pa., plant, Ray Ewing Co., has joined Miller & Bushong, Inc., Rohrerstown, Pa., as production superintendent. Mr. Brubaker is a native of Lancaster County and a graduate of East Hempfield Township School.

200,000-Bird Units Seen for Wisconsin

MADISON, WIS. — A prediction that Wisconsin soon would see laying operations with 200,000-bird units was made here recently by Baxter Newton, State Department of Agriculture poultry marketing specialist.

Mr. Newton pointed out that Wisconsin moved up from 13th place to seventh as an egg producing state in three years.

Broiler production also is moving up in the state, Mr. Newton noted, with the three principal broiler production areas being around Arcadia, Spring Green and Rice Lake. He said he believed the trend toward larger broiler production was faster in Wisconsin than in other states, with buildings in new broiler facilities being designed and constructed to handle more than 10,000 birds in a batch.

"In fact, with the mechanization we have available, one man could handle 20,000 birds at a time," Mr. Newton said.

He also predicted that the size of turkey breeding flocks in the state would be up to about 100,000 this year, compared with 80,000 in 1958 and 70,000 in 1957.

The poultry specialist noted that there is a strong trend toward the large white variety of turkey, especially in operations around Richland County.

He said integration is completely changing the economic organization of turkey production in the state.

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PPCC Announces New Appointments

SAN FRANCISCO — Several new appointments that effect administrative changes in the Poultry Producers of Central California have been announced by L. N. Thompson, general manager of the egg marketing and feed-supply cooperative.

Robert G. Christensen has been named to the newly-created post of director of operations. He has been serving as assistant to the general manager since May, 1958. Les W. Sperring has been promoted to feed procurement manager. He has been employed by the association since 1934, and for many years has served as assistant to the feed department manager.

Horace S. Normann has been employed by PPCC and appointed feed production manager. He was formerly with Poultry Producers (1930-1932), and has served as general manager of the Hayward Poultry Producers Assn. since 1946. Norman C. Ortman, Jr., has assumed the post of supply department manager, having formerly been in charge of the operations of the supply division of the feed department.

OUTPUT INCREASE PLANNED

CUTHBERT, GA. — The Shivers Farm and Hatchery near Cuthbert, with 7,000 laying hens producing eggs for hatching purposes, plans to increase production by adding another 7,000 hens by the end of 1959. Mr. and Mrs. Fred Shivers, who operate the business along with John Smith, announced plans to build three houses, each to hold more than 2,000 of the breeder-type hens that provide eggs for their hatchery. The hatchery produces 21,000 to 22,000 chicks a week.

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NEW HOPPER BOTTOM and bearing housing.
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It's no secret why—over the years—the Kelly Duplex Vertical Feed Mixer has been such a favorite with feed mill and elevator operators all over the country.

The Kelly Duplex is unconditionally guaranteed to mix more feed with the same power than any other machine on the market—and to produce a mixture so evenly and thoroughly blended that it will stand the most rigid inspection. A complete batch can be loaded, mixed and sacked in less than fifteen minutes.

Constructed of heavy, arc welded steel—the Kelly Duplex completely eliminates feed loss, is practically noiseless in operation, and is so liberally rated that owner after owner reports it will hold up to twice its stated capacity.

Now, with a new motor mount, a new inspection door, a new bagger, and a new hopper bottom and bearing housing—the Kelly Duplex Vertical Feed Mixer is 4 ways better than ever before—and, more than ever before, is your one best mixer buy.

For top performance, lower maintenance, greater ease of handling and BIGGER PROFITS, you owe it to yourself to fully investigate this outstanding machine before you buy any feed mixer. Check and mail coupon today for full details.

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Animal By-Product Analysis: Interpretation Of Microscopic and Chemical Methods

By E. E. Brown
Assistant State Chemist
Texas Agricultural Experiment Station

The composition and proximate analysis of the various types of animal by-products is defined by state and federal laws.

Through the use of official chemical methods, average chemical values have been determined and the values are usually accepted in the trade for the products. Chemical analyses made on animal by-products, such as meat meal, meat and bone meal, digester tankage, poultry by-product meal, hydrolyzed feather meal, etc., are acceptable to control and regulatory services as long as they agree with the proximate and average analysis established for each of the products. Controversy arises only in cases where the analyses are found to be in variance with established standards.

When a sample of meat and bone meal is analyzed and found to deviate several points from the average and proximate analysis, suspicion is immediately aroused as to its composition and purity. Sometimes, one or more of the analyses may indicate excessiveness of certain ingredients contained in the product. Example: a product labelled 50% protein meat and bone scraps, was analyzed and the following values were obtained: protein 48%, ash 36%, calcium 12% and phosphorus 6.50%.

Interpretation: The analyses obtained for ash, calcium and phosphorus are higher than is normally found in this type of product. The analyses indicate bone meal is the ingredient excessive in the mixture. This assumption is made because bone meal will yield about 25-26% protein, 62-65% ash, 21-22% calcium and 10-11% phosphorus.

In the same example, had the protein met the minimum guarantee or perhaps ranged above the guarantee, then the sample might be suspicioned of containing extra ingredients, such as blood meal, hair, raw feathers, etc., all of which yield high nitrogen. Microscopic methods can be used in such cases to determine the ingredients involved.

EDITOR'S NOTE: The accompanying article is the text of a paper prepared by Mr. Brown, who is assistant state chemist at the Texas Experiment Station at College Station. The paper was distributed to microscopists who attended the last Feed Microscopy Short Course at the Texas station.

The microscopist is often called upon to determine the quantity of feathers, poultry by-product meal, etc., combined with products labelled as meat and bone scraps. The task is rather difficult since a great deal of the tissue found in poultry meals is identical with that found commonly in meat and bone scraps and can not be differentiated by microscopic methods. There are only a few tissue structures in poultry meal that are sufficiently different in their structure as to permit positive identification. Thus, the microscopist is never quite satisfied with quantitative findings on such material and will try to use whatever evidence is available from chemical analysis to back up or to check his own findings.

A good grade meat and bone scrap sample will yield certain chemical values different from those of a sample of good grade poultry by-product meal.

Example: A good grade meat and bone scrap sample will have the following average analysis: ash 28%, calcium 10% and phosphorus 5%.

A good grade poultry by-product meal will have the following average analysis: ash 18%, calcium 4.79% and phosphorus 2.46%. If the two products are put together in a mixture and an analysis is made, a new set of values for ash, calcium and phosphorus will be obtained. By use of the new values obtained (ash, calcium and phosphorus), it is possible to calculate the per cent of each of the products in the mixture:

Let X = the amount of ash from poultry by-product meal, and 100 — X = the amount of ash from the meat and bone scraps,

$$\text{then \% (ash)} = \frac{(X \times 18) + (100 - X)\,28}{100}$$

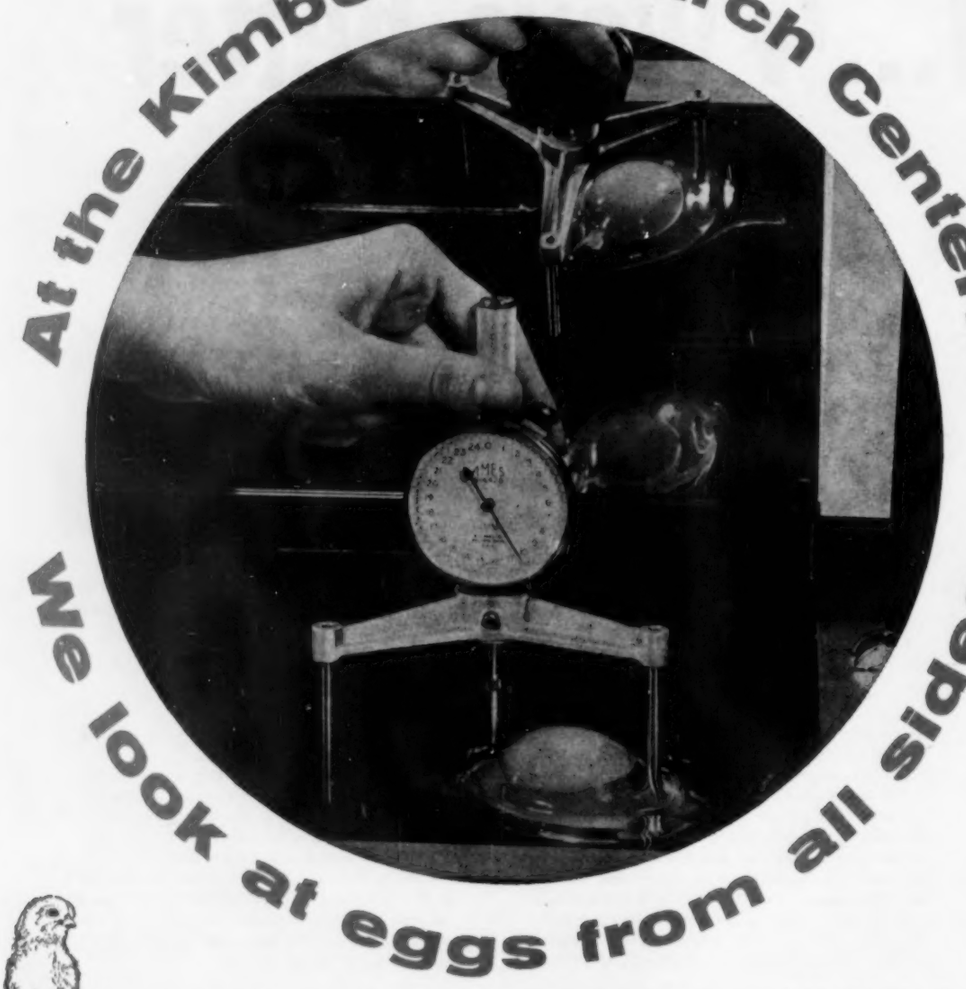
$$\text{\% (Calcium)} = \frac{(X \times 4.79) + (100 - X)\,10}{100}$$

$$\text{\% (Phosphorus)} = \frac{(X \times 2.46) + (100 - X)\,5}{100}$$

Example: A sample labeled 50% protein meat and bone scraps was analyzed in the laboratory and the following values were obtained: ash= 26.65%, calcium = 9.30%, and phosphorus = 4.65%.

Microscopic examination found the sample to be a mixture of meat and bone scraps and poultry by-product meal. A microscopic quantitative analysis was made (using factor 79) to determine the amount of the poultry by-product meal. It was found to be 12.17%.

Problem: How much poultry by-



Imagine breaking out over 100,000 eggs, examining each one from above and below, from front and back, noting the size of any blood or meat spots, and measuring and recording the height of the firm albumen.

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Charles Y. Roberts

PROMOTION — Appointment of Charles Y. Roberts as manager and technical serviceman for the turkey division of Yoder Feeds, Inc., Kalona, Iowa, has been announced by Lester Yoder, president. Before joining Yoder in March, 1955, he had nutrition, research and field service with another feed firm. Mr. Roberts has a B.S. degree from Texas Technological College and an M.S. degree from Iowa State College.

product meal is indicated by chemical data?

Calculations:

$$\text{(ash) } 26.65 = \frac{(X \times 18) + (100 - X)\,28}{100}$$

Solving: X = 13.50% poultry by-product meal (based on difference in ash).

$$\text{(calcium) } 9.30 = \frac{(X \times 4.79) + (100 - X)\,10}{100}$$

Solving: X = 13.43% poultry by-product meal (based on difference in calcium).

$$\text{(phosphorus) } 4.65 = \frac{(X \times 2.46) + (100 - X)\,5}{100}$$

Solving: X = 13.78% poultry by-product meal (based on difference in phosphorus).

Conclusion: The amount of poultry by-product meal present in the sample is a figure between 12.17% and 13.78%. The former (12.17%) was determined by microscopic quantitative analysis; the latter (13.78%) was calculated from values obtained by chemical analysis.

New Laying Flocks For Memphis Market

MEMPHIS, TENN. — The Mid-South appears to be on its way toward producing its own eggs and may, in the near future, become an exporter.

New laying flocks are being established by producers throughout the Memphis trade territory as part of the trend toward diversification on family-sized units.

For many years the Memphis egg market was supplied by the Midwest. Now most of its shipments are coming from nearby points in Mississippi, Arkansas and Tennessee. Besides, large quantities of southern eggs are being shipped to northern points.

Professional egg men helping develop the industry in northeast Mississippi include Jack Morris, Memphis; L. E. Skinner, Iuka, and William L. Caver, Booneville. Recently Mr. Morris opened a processing plant at Booneville which has a capacity of 30,000 doz. eggs a day. It will require about 500,000 hens to keep the plant running at capacity.

Mr. Skinner and Mr. Caver have contracts with some 65 producers and are marketing around 1,600 cases of eggs each week. They said their business is expanding rapidly.

More Profits Seen in Cattle Than Cotton

MEMPHIS, TENN.—Cotton farmers can make more money on their best delta land by raising cattle rather than cotton, Dr. J. D. Aughtry, manager of agricultural services for the Grace Chemical Co., Memphis, told members of the Agricultural Club of Memphis at the Hotel Chisca.

Dr. Aughtry said, "The Mid-South has the greatest potential in beef production of any section of this country or Latin America."

He gave a cattle feeding formula which he said can make cattle raising more profitable than cotton, and on the same kind of land.

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FDA Policy on Use Of Mycostatin in Feeds Explained

NEW YORK — An explanation of Food & Drug Administration policy on the use of Mycostatin-20 in feeds has been issued by Arthur E. Tempel, technical director, chemical sales department, E. R. Squibb & Sons, New York, manufacturer of Mycostatin.

In an article in Feedstuffs, Feb. 14, page 4, Dr. Damon Catron, Iowa State College, suggested the rotation of antibiotics, and also suggested that "an effective anti-fungal antibiotic, such as Mycostatin," be used, "especially during the stages of the life cycle where high levels of either a broad spectrum or a combination of antibiotics are being fed." He said Mycostatin has proven to be an effective anti-fungal antibiotic against Candida tropicalis and Candida albicans.

Mr. Tempel's explanation of FDA policy is as follows:

"Mycostatin-20 is a new drug and its use in farm animal feeds is permitted only where the feed manufacturer holds an effective application with the Food & Drug Administration. . ."

"Food & Drug Administration clearance to date provides that turkey and swine feeds may not contain any other medicament except antibiotics at combined levels below 50 gm. of antibiotic per ton of complete feed in combination with levels of Mycostatin up to 100 gm. per ton for use as a therapeutic agent and in growth promotion.

"A supplemental application was filed recently by Squibb with the FDA requesting approval for the use of Mycostatin in laying hen rations.

Restriction

"Despite the FDA clearance above for Mycostatin-20, we are restricting its use to growth promotion, which means the feed may not contain any other medicament except antibiotics including Mycostatin-20 at combined levels below 50 gm. of antibiotics per ton of complete feed.

"The application may take one of two forms. A feed manufacturer may hold (1) an effective Form 10 application for exemption for antibiotics mixed in animal feeds, or (2) new drug application, in order to market feeds in which it is contained. The Form 10 application provides for the use of one or more of the certified antibiotics with Mycostatin-20. The new drug application makes possible the use of Mycostatin-20 in combination with one or more of the non-certifiable antibiotics such as oxytetracycline. You may want to make both filings. It takes approximately 60 days to obtain FDA clearance after the application is filed. Filing kits are available on request to expedite your filing.

"Except for investigational use, no order for Mycostatin-20 may be shipped to you, and no feed containing Mycostatin may be manufactured by you until your new drug application becomes effective.

"E. R. Squibb & Sons has made arrangements with the FDA for the company to pay fees, normally chargeable to its feed manufacturer customers, under a new FDA regulation applying to feeds containing certifiable antibiotics in combination with new drugs.

"If you should decide to make an immediate filing under the conditions so defined, future amendments to your original file can be made, as the Squibb file is enlarged for the use of Mycostatin-20 with other medicaments and medicated levels of antibiotics.

"Action has been taken to register Mycostatin-20 in the various states."

Jerry Price

JOINS BURRUS MILLS — Jerry Price has joined Burrus Feed Mills, Ft. Worth, as director of dealer promotion and poultry finance, according to co-managers Wesley Ballmann and Charles Harris. Mr. Price will be in charge of the development and coordination of dealer activity and he will work closely with dealers and customers in poultry financing operations, the co-managers said. Before joining Burrus, Mr. Price served as a county agricultural agent. He has also managed a feed store and a feed mill and was a field representative for American Cyanamid Corp.

New Branch Warehouse

INDIANAPOLIS, IND. — The Anderson Box Co., Indianapolis, has announced the opening of another new branch warehouse to serve poultrymen in the Southeast. Located at Cochran Field, Macon, Ga., the new warehouse is only a few miles from Anderson's corrugated box plant in that city.

In addition to the company's line of Pullman chick boxes and Blue Ribbon hatchery supplies, Anderson has stocked a complete line of poultry equipment.

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She's not shooting the bull.
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"Ful-O-Pep's new Pep-Mixing Program is helping dealers build volume in the tall corn country,"

says **H. W. COLE,** *Manager of Central Feed Division of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*

HAROLD COLE literally grew up in the feed and grain business. He managed grain elevators before joining The Quaker Oats Company in 1946. For the past nine years, he has been Manager of the company's country elevators. In 1955, he was also made Manager of Ful-O-Pep's Central Feed Division.

"Last year was another big year for mid-west farmers. Plenty of corn—plenty of oats and other grains, too.

"Now off hand, you might think that a surplus of grain would be bad for the feed business, because farmers with a lot of grain are usually not in the market for complete feeds.

"The fact remains that our aggressive Ful-O-Pep Dealers have shown excellent tonnage growth. Farmers today are business men and demand full-feeding value and top feeding results. With Ful-O-Pep's new Pep-Mixing Program, hog feeding plans and quality egg plan, our dealers are better equipped to help feeders reach their goals.

"I suppose our Pep-Mixing Program is a little bit different from most plans. We don't demand that our dealers follow this program. We simply supply the know-how and in a helpful way show dealers how to do business more efficiently!

"We train our men to figure costs, inventory control and grinding and mixing charges. They also counsel with dealers on concentrates, equipment and mixing formulas.

"This service, which is free to all dealers, is just one of the many ways Quaker is helping dealers increase their tonnage and profits, too."

Harold W. Cole

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Texas Elevator Plans Additional Grain Bins

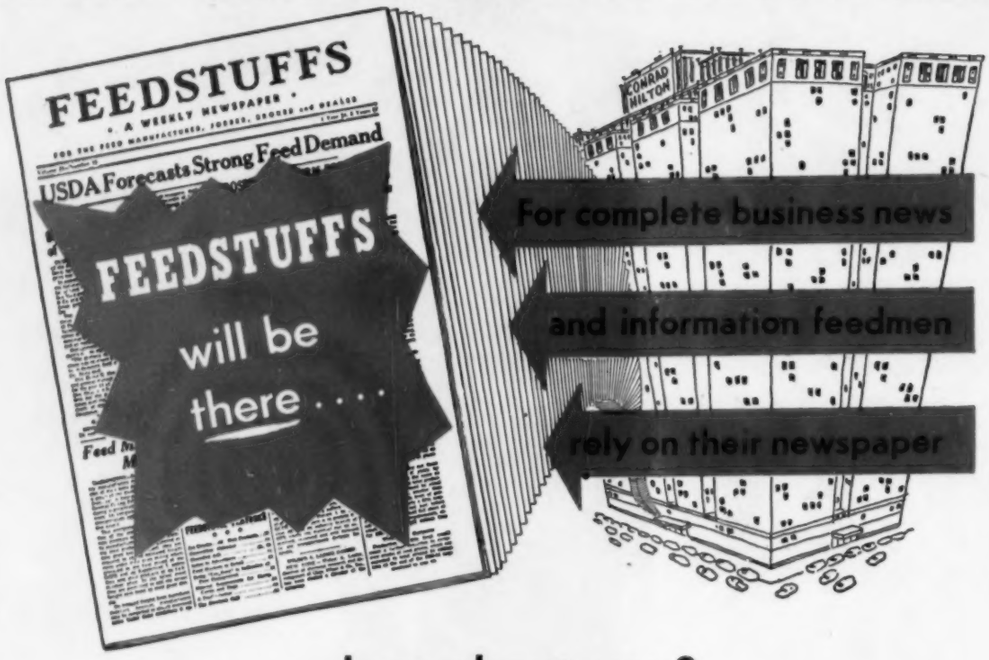
CORPUS CHRISTI, TEXAS — Additional grain bins now under construction are expected to increase the storage capacity of the Corpus Christi Public Elevator by 2 million bu., according to Clark Miller, manager.

Mr. Miller said grain movement through the elevator has been unusually large since the first of the year. In January alone, 4 million bu. were loaded. On a recent date, several large freighters were in port waiting to be loaded and 10 ships were due to take out grain before April 10. About two thirds of the cargo will be maize and the remainder corn.

UNITED FUND CHAIRMAN

ST. JOSEPH, MO.—Dwight Dannen, president of Dannen Mills, Inc., St. Joseph, has been named campaign chairman for the 1959 United Fund drive here.

AFMA Convention and National Feed Show



. . . how about you?

At no other time during the year will you find more feedmen getting together for "brass-tacks" business than at the American Feed Manufacturers Association meeting and National Feed Show in Chicago, on May 11-13. It's the time of the year when your customers and prospects are new-products minded, when ideas are exchanged and plans develop. As in past years . . . it's become a tradition . . . Feedstuffs AFMA convention issue will be delivered to registrants' (about 2,000) hotel rooms on Monday morning. In this before "ham 'n eggs" copy of their newspaper, feed men will find convention news and notes, outstanding feature articles, plus all the important news they look for in their regular weekly copies of Feedstuffs.

In short, the May 9 issue of Feedstuffs with bonus distribution and outstanding editorial content zeroed-in on interested readers adds up to a once-in-a-year opportunity for your advertising dollars to do double duty.

To their hotel rooms and to the Feed Show, Feedstuffs will carry your sales message . . . tying-in with your exhibit or, if you are not exhibiting, telling your sales message to the men who make up the $4 billion feed industry.

Advertising Deadline: April 27 Place your space reservation now by calling the nearest Feedstuffs office . . .

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NEW YORK Murray Hill 2-2185 551 Fifth Ave.
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A tourist stopped to talk with a backwoods farmer. "I see you raise hogs almost exclusively around here," he said. "Do they pay better than corn and potatoes?"

"Well, no," drawled the farmer, "but hogs don't need no hoein'."

◆ ◆ ◆

We've just heard about the West Coast dress buyer who dropped in at the New York firm. "Mr. Jackson or Mr. Parker," he requested.

"Sorry," said the receptionist, "they're both out of town."

"Mr. Lewis, then."

"Mr. Lewis is tied up."

The next day he called back, and was again unsuccessful. On the third day he telephoned and was told the two partners were still out of town.

"And Mr. Lewis?"

"Sorry, he's tied up."

"What goes on?" the buyer shouted. "He's been tied up for three days!"

"Oh," explained the girl. "Mr. Lewis is the junior partner. When the others go away, they ALWAYS tie him up."

◆ ◆ ◆

A barber shop customer was complaining about the price of haircuts. "I'm just back from London," he said. "Over there I was able to get a good haircut for 65¢."

"Yeah," retorted the barber. "But look at the fare."

◆ ◆ ◆

The hysterical golfer rushed into the clubhouse shouting that he had just killed his wife. "I didn't know she was behind me," he sobbed. "I started my back swing and the club hit her on the head. She was dead before she hit the ground."

"What club were you using?"

"The No. 2 iron."

"Oh, oh," murmured the other, "that's the club that always gets me in trouble, too."

◆ ◆ ◆

The two traveling bopsters while in Russia saw a guy being flogged in a public square. "I don't dig the beat," said one cat, "but that sure is a crazy drum."

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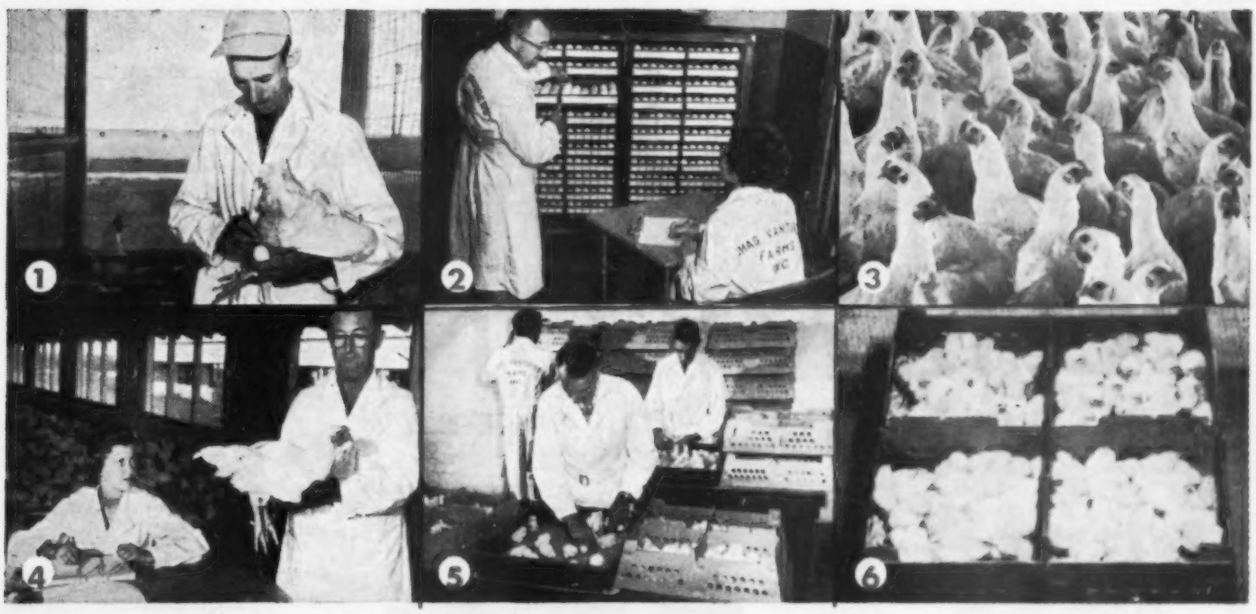

1. Eggs from trap nests in 350 single sire pedigree pens are marked with dam's number.
2. Eggs are trayed and recorded. Each chick can be traced accurately and quickly to hen and sire.
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4. Measurements on individual pedigree crosses are included in sire family summaries and are used in breeding selection work.
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The Chas. Vantress program of applied genetics and precision breeding is a vital contribution to continuing improvement of Broiler Industry efficiency. The unequaled technical know-how of the Vantress staff is dedicated to the future with the same spirit of service that has paced Industry progress to the present.

CHAS. VANTRESS FARMS, INC., DULUTH, GA. DOMINANT WHITE MALE LINE

Chas. Vantress Farms, Inc.

DULUTH, GEORGIA

Oats, Barley Tested With Enzymes in Maine Broiler Trials

ORONO, MAINE—Neither oats nor barley was a satisfactory substitute for all of the corn in broiler rations, nor did the addition of commercial enzymes significantly change the nutritive value of the rations in recent feeding trials, according to the Maine Agricultural Experiment Station here.

Dr. Richard W. Gerry, University of Maine poultry scientist who reported on the trials in Maine Farm Research, station publication, said enzyme supplements added to the New England College Conference broiler rations did, in some cases, produce slightly heavier birds, but the increases were not significant.

These results, he pointed out, are not in agreement with those from Washington State College where Dr. James McGinnis and co-workers were able to improve the value of rations containing western barley by adding enzyme supplements.

Dr. Gerry emphasized that eastern barley was used in the Maine tests. He said recent reports from other experiment stations seem to indicate the possibility that eastern barley is superior to western as an ingredient in poultry feeds.

In the Maine trials, five tests were conducted in which enzyme supplements were used. The first trial used oats as a replacement for one fourth and one half the corn. Duplicate lots of 20 males and 20 females were started on each ration in all tests. The approximate least significant difference between average weights at the 5% level was 0.08 lb. in the first three tests and 0.07 lb. in the last two.

One fourth of the corn in the ration was replaced by oats without affecting growth significantly, but one half replacement produced significantly lower average weights. Feed efficiency decreased as the amount of oats was increased, and the addition of enzyme did not help.

When barley replaced one fourth and one half the amount of corn, growth rate was not affected significantly, but feed efficiency was not as good. Addition of enzyme did not improve growth rate.

Replacement of all corn with barley brought lower chick growth than with corn, and growth was significantly lower with the enzyme-supplemented barley diet. The enzyme supplement used in the first three tests was MK-124.

DaweNzyme was used in the fourth test. In this test all corn was replaced with oats or barley. Data shows that although birds fed rations containing the added enzyme were heavier than those which did not receive the enzyme material, the differences were not statistically significant. The addition of the enzyme had little or no effect on feed efficiency, said Dr. Gerry.

Another commercial preparation, Agrozyme, was used in the fifth test. The broilers were reared to eight weeks on rations similar to those used in the fourth test. Growth rates were again significantly less and feed efficiency was reduced when barley or oats replaced corn. The enzyme material did not help, Dr. Gerry said.

Gets New Position

WILMINGTON, DEL.—E. A. Yutzi, Georgetown, Del., who served for six years as secretary-treasurer for the Delaware Feed Dealers Assn., has been appointed full-time secretary and general manager of the Delaware Motor Transport Assn., it was announced by Arthur Webb, DMTA president. Mr. Yutzi came to Delaware in 1934 and for the next 20 years served as Delmarva Peninsula sales representative for the Early & Daniel Co., Cincinnati, feed manufacturer and grain handler.

Oil Chemists Outline Convention Program

NEW ORLEANS—A total of 59 papers will be presented at the 50th anniversary meeting of the American Oil Chemists' Society to be held April 20-22 at the Roosevelt Hotel here.

An outline of the program announced recently said two symposia will highlight the meeting: "Fifty Years of Fat and Oil Research in Selected Countries of the World" and "Fifty Years of Progress in the Chemistry and Technology of Fats." Six other technical sessions are also planned.

Included among the papers to be presented is one on the "Determination of Water Dispersible Protein in Soybean Oil Meals and Flour," by T. M. Paulsen, K. E. Holt and R. E. Anderson, Archer-Daniels-Midland Co., Minneapolis.

Feed Microscopists Group Plans Meeting

QUINCY, ILL.—The American Association of Feed Microscopists will hold its annual meeting April 27-29 at the Hotel Lincoln Douglas in Quincy, according to G. M. Barnhart, Missouri Department of Agriculture, association secretary. The Moorman Manufacturing Co., Quincy, will be industry-host for the meeting.

The program is being completed under the direction of Albert Gehrt of the Moorman firm, program chairman. Major meeting presentations at the sessions will be on subjects of interest to microscopists in both the feed industry and state regulatory agencies. Workshop sessions are also being planned, as well as tours of the Moorman production operations and agricultural research facilities.

Information on the meeting may be obtained from Mr. Barnhart, chief chemist, feed laboratory, Missouri Department of Agriculture, Jefferson City, Mo.

New Installations of Equipment Continue

The continuing trend toward modernization of and installation of new feed milling facilities is shown in a recent report from Prater Pulverizer Co., Chicago.

A recent report from the company lists installations of 82 different items of Prater equipment in 15 states—Wisconsin, Indiana, Iowa, Illinois, Florida, South Dakota, Michigan, Connecticut, Missouri, Nebraska, Kansas, Mississippi, Oklahoma, Washington and Minnesota.

The equipment listed includes grinding, mixing, conveying and other machinery.

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More than two tons of bagged concentrates can be hauled on this Champion unit, to save you extra truck- and man-hour expense. And you'll save the expense of an auxiliary feeder with Champion's sheller arrangement because ear corn and grain are conveniently fed by the same feeder which feeds the hammermill unit. Ear corn is diverted into the sheller or into the mill unit as desired, through the use of a simple control valve in the feeder head.

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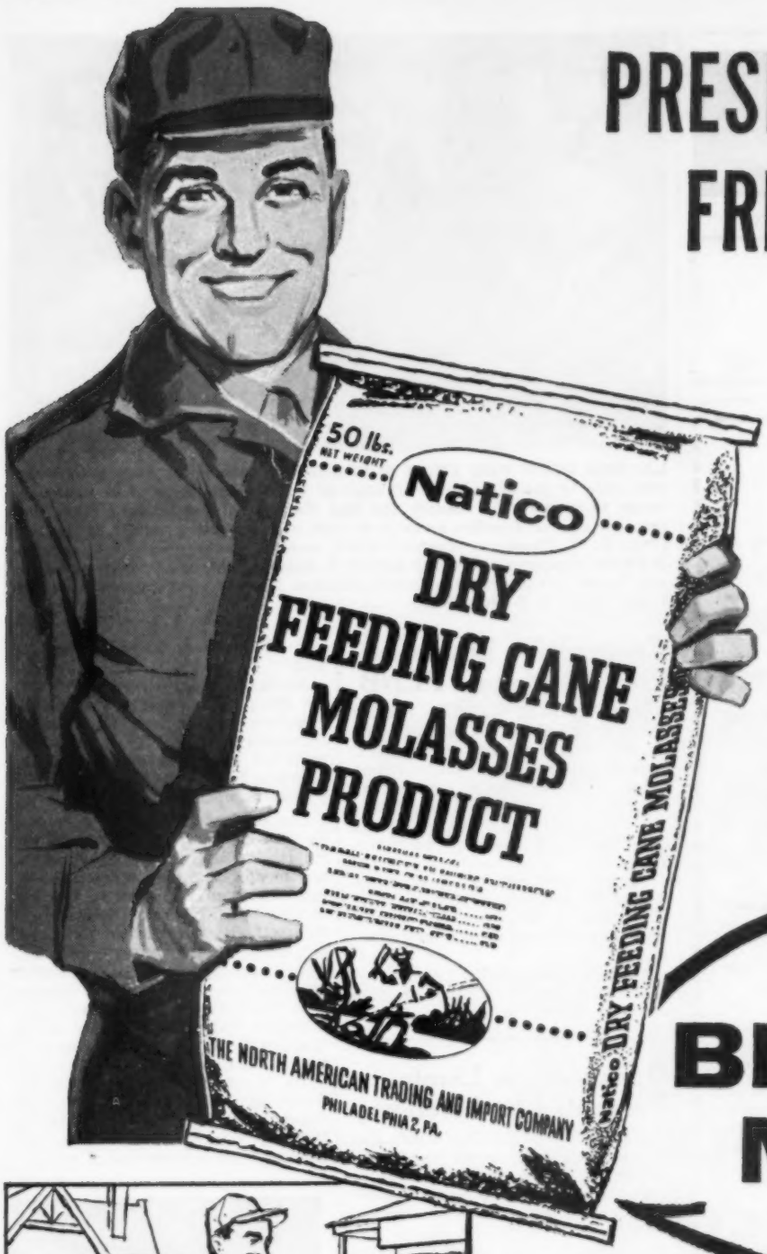

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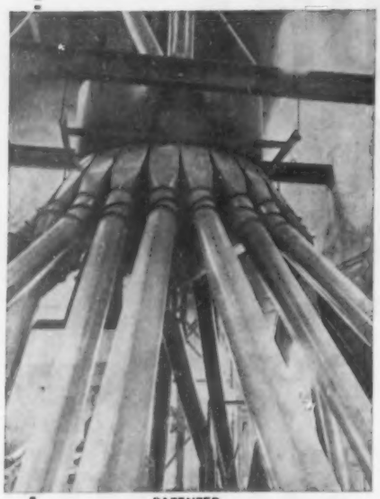

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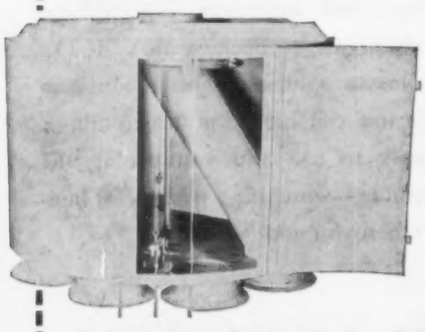

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LAUNCH PLAN FOR PENB SUPPORT—The launching of a plan which sets aside 1¢ per 30-doz. case of eggs by Poultry Producers of Central California to support the Poultry and Egg National Board brought these men together at San Leandro recently to talk over operating details of the program. L. N. Thompson (center), PPCC general manager and also president of PENB, compares notes with Robert A. Shone (right), association president, and Ralph J. Ahl, egg department manager. Mr. Ahl is also president of the Pacific Dairy & Poultry Assn.

Cooperative Launches Plan to Support PENB

SAN LEANDRO, CAL. — Poultry Producers of Central California, one of the nation's largest egg farmer cooperatives, recently went on a voluntary set-aside plan to help finance the consumer information program of the Poultry & Egg National Board, according to a company announcement.

Nearly 1,500 egg producer members of the cooperative began on Feb. 1 to invest 1¢ for each 30-doz. case of eggs they market through their association.

An estimated $18,500 per year is expected to flow to PENB to promote eggs in direct proportion to the amount invested, an announcement said.

Amounts voluntarily set aside under the plan will be itemized on the members' weekly settlement checks. Accumulated weekly investments, collected at the association's headquarters here, will be forwarded to PENB once each month.

The set-aside, approved in January by PPCC's board of directors, puts into operation a long-range financing and membership plan adopted for the egg branch of the industry last December by PENB's directorate. Similar methods of voluntary fund raising, made binding through informally signed agreements until withdrawn by signed notice, were also adopted for other industry branches and allied interests. Patterned after the American Dairy Assn.'s producer-supported national program, the plan provides "a sound, businesslike, monthly financing method that has stimulated unprecedented support of PENB by industry sources throughout the country," the announcement said.

Dystrophy in Lambs Prevented by Selenium

MADISON, WIS.—The nutritional element, selenium, shows promise for preventing white muscle disease or muscular dystrophy in lambs, according to University of Wisconsin researchers. However, vitamin E was more effective than selenium in preventing an experimentally-produced dystrophy, they said.

The researchers said work at other experiment stations has indicated that trace amounts of selenium were protective against the disease which occurs in flocks fed practical farm rations.

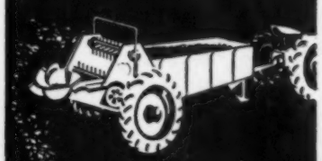
J. G. Welch, Dr. A. L. Pope, Dr. W. G. Hoekstra and Dr. P. H. Phillips, Wisconsin Experiment Station staff members, fed ewes a ration of poor alfalfa hay and a grain mix with fairly large amounts of fish liver oil. Fish liver oil will cause muscle dystrophy when fed in large amounts if the remainder of the ration is low in vitamin E, they said. Large doses of vitamin E will counteract this effect.

The ewes were divided into three groups. One got additional vitamin E per week. One received selenium at ½ p.p.m. of the total ration, and the third received no supplementation.

All lambs from ewes receiving the added vitamin E were normal. Sixty per cent of the lambs from ewes receiving selenium had some indications of the disease. Eighty-eight per cent of the lambs from ewes getting neither the vitamin E nor selenium had some disease symptoms.

Selenium seems to decrease the severity of the dystrophy caused by the fish liver oil, the researchers reported.

Since high intake of oil and low vitamin E intake do not appear to be the factors responsible for field cases of white muscle disease in Wisconsin, selenium may be more beneficial in naturally occurring cases, they said. Further tests with the material are now in progress.



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ONE (1) SPROUT-WALDRON NINE-TON, three compartments, rebuilt Nu-Vac unloader bulk feed body. Guaranteed. Now ready to be mounted on truck. Call, write or come see us today. H. Steele, Inc., Industrial Blvd., P.O. Box 707, Gainesville, Ga.; LEnox 2-1597, LEnox 2-8637.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE — 1955 DAFFIN PORTABLE feed mill with batch mixer and molasses supply. Mounted on 1956 Ford, 8-cylinder, F-600 truck. Condition excellent. Write or phone H. R. Williams Mill Supply Co., 1320 Main St., Kansas City, Mo., Victor 2-3232.

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SALE — ALUMINUM TANK, 4,000 GAL. Dewatering presses: Davenport No. 1A, No. 2A, No. 3A; Louisville 8-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x50', 6'x30', 6'x25'; screw conveyor, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

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Grain division: B. C. Swanson, Swanson Elevator Co., New Sharon.

Feed division: George Opperman, Manning (Iowa) Mills.

Articles and bylaws: Mr. Opperman.

Insurance: Bob Couch, Bates-Couch Grain Co., Des Moines.

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Research Data Reported on Use of Santoquin in Forages

Following the Food & Drug Administration clearance of the antioxidant Santoquin for use in dehydrated alfalfa and other dehydrated forage crops, research data gathered prior to that approval has been outlined by researchers of the Monsanto Chemical Co., St. Louis.

(FDA clearance of petitions for the use of Santoquin in poultry feeds and dehydrated forages was reported earlier in Feedstuffs—Jan. 31, page 2, and Feb. 14, page 1.)

According to Dr. Kenneth H. Maddy, Monsanto organic chemicals division, research conducted by the U.S. Department of Agriculture and industrial and university research laboratories, as well as Monsanto, has indicated that the addition of Santoquin to dehydrated forage crops will significantly reduce the rate of carotene destruction.

"The recommended use level for Santoquin and the maximum level permitted by the FDA under the regulation is .015%, or .3 lb. per ton, which is the same level that the U.S. Department of Agriculture found to be optimum," Dr. Maddy pointed out. He mentioned that the FDA has granted under this petition the right to add Santoquin to 15 other dehydrated forage crops. They are: Barley, annual rye, annual clover, crimson clover, red canary grass, coastal Bermuda grass, perennial rye grass, oats, fescue, wheat, red clover, orchard grass, white sweet clover, yellow sweet clover and white clover (including ladino).

Dr. Maddy explained that in a test to determine the comparative effectiveness of various antioxidants in their ability to preserve carotene in dehydrated alfalfa stored at an elevated temperature, antioxidants in acetone solution were applied to dehydrated alfalfa which was then stored for 14 days at 65 degrees C. He reported that for Santoquin, 63% carotene remained, or 268% of the control; for DPPD, 51% carotene remained, 215% of the control; BHA, 33% carotene, 140% of control, and BHT, 30% carotene, 128% of control. For the control, 24% carotene remained.

Figure 1 shows why the use level of Santoquin was established at .3 lb. per ton by the Western Utilization Research Branch of the USDA. There is an increase in carotene retention with each increase in the level of Santoquin. The curve starts to flatten out at the .015%, or .3 lb. per ton, level of Santoquin. It was therefore concluded that .015% was the optimum dosage level.

Storage Conditions

Figure 2 illustrates the effect of Santoquin added to alfalfa meal that is stored under mild conditions, and then subjected to a more extreme temperature. Dr. Maddy explained that the first portion of the curve shows the rate of loss of carotene during storage at 40 degrees F., a temperature commonly found during flat storage of alfalfa. The temperature was then increased to 90 degrees F. to duplicate conditions during transit.

"As was to be expected, increasing the temperature resulted in a very noticeable increase in the rate of destruction of carotene in the control sample," Dr. Maddy said. "After 48 weeks, this control sample contained no usable carotene, whereas the material treated with Santoquin still possessed 60% of the original carotene." He noted that the rate of carotene destruction in the sample treated with Santoquin did not increase when the temperature was increased.

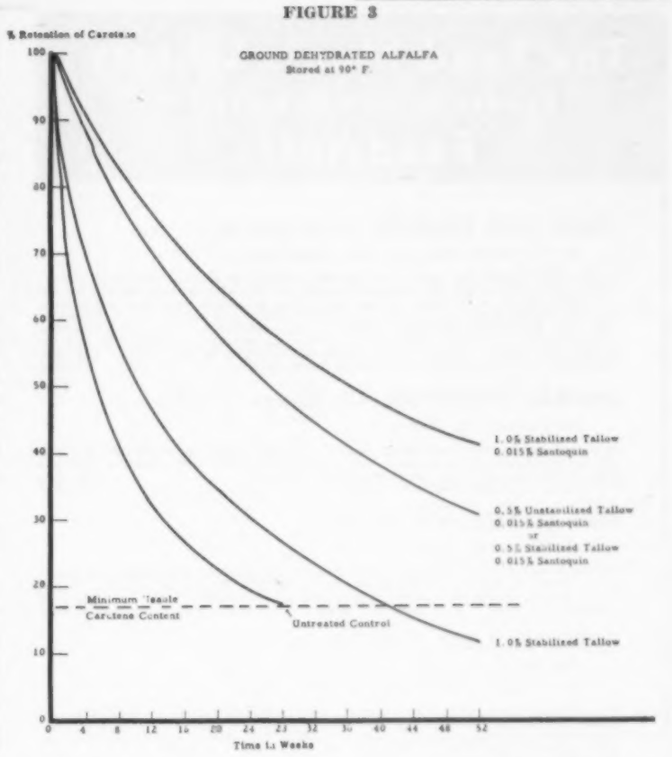
"Although storage in an atmosphere of inert gas completely prevents destruction of carotene in alfalfa, removal from inert gas storage will once again permit normal destruction to occur. Therefore, Santoquin is necessary in order to prevent this rapid loss of carotene after removal from inert gas storage," the researcher explained.

Types of Protection

The specific type of protection obtained from the addition of this antioxidant is shown in Figure 3. It should be noted that the alfalfa was stored at 90 degrees F., which is higher than is found under normal storage conditions, but certainly does duplicate conditions often found in transit, according to Dr. Maddy.

"It is assumed that a carotene retention of 18% represents the minimum useable carotene content for dehydrated forage crops. This level was obtained in the control sample in 23 weeks. Although the addition of 1% stabilized tallow does exert some protective effect, it was still not enough to prevent complete loss of carotene in 40 weeks. The addition of .015% Santoquin increased carotene retention so that even after 52 weeks of storage, the alfalfa meal contained 40% of its original carotene content. Using 1% fat rather than .5% as a carrier for Santoquin improved carotene retention because of better distribution of the Santoquin through the alfalfa meal."

FIGURE 3



Method of Mixing

The recommended method of addition of Santoquin to dehydrated forage crops has been determined. Since the product is a fat soluble liquid, it may be diluted with fats or oils used for dust control or pre-mixed on alfalfa and blended with the untreated dehydrated forage crop. Santoquin is added to the dehydrated forage crop only once, preferably immediately after dehydration, in order to insure maximum protection of carotene and other oxidizable nutrients. However, it may be added upon removal of the dehydrated forage crop from inert gas storage, Dr. Maddy said.

A study conducted by Dr. George O. Kohler and Dr. C. Ray Thompson, USDA, has indicated the potential economic returns from the use of Santoquin in dehydrated alfalfa meal. "It is of interest to note that they calculate that the addition of Santoquin to 1 million tons of dehydrated alfalfa will save $17,500,000 worth of carotene. The values attributed to vitamins E, K and xanthophyll bring the total savings to $29,140,000 per year," Dr. Maddy said.

FIGURE 1

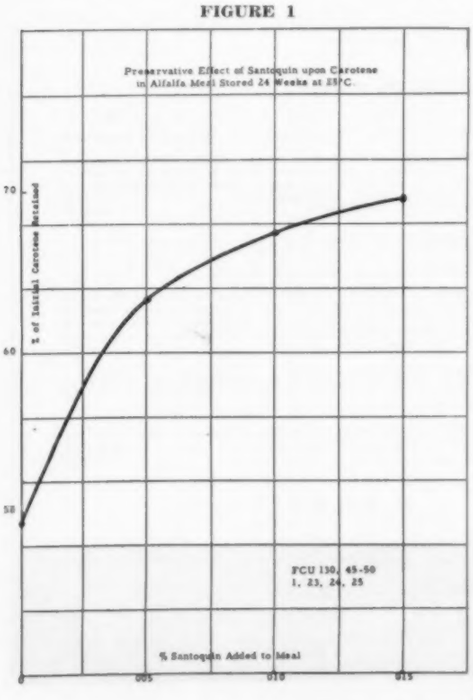
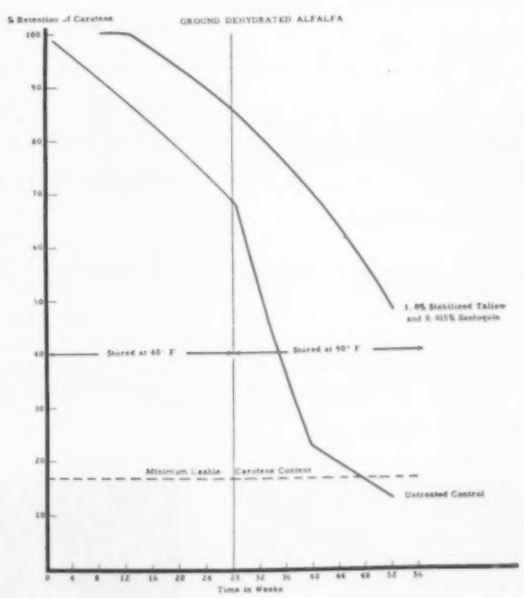


FIGURE 2



Western Consumers Marks 40th Year

PARAMOUNT, CAL.—Western Consumers Feed Co., Paramount, celebrated its 40th anniversary this month. It has grown from a modest beginning as the Western Hay & Grain Co. to a firm which now employs 60 persons.

The firm deals almost exclusively in bulk feed handling. It serves dairymen in the areas of Los Angeles, San Bernardino, Orange, Riverside and San Diego counties.

Gail McDowell, president, said that over the years the firm has added new equipment representing thousands of dollars in investment to keep handling costs low. He said the company's markup per ton is lower now than it was 12 years ago.

Newest equipment installed by the firm includes facilities for increased speed of handling and mixing as well as a new pelleting mill. The firm also owns a high-producing dairy herd it uses for feed tests.

Mr. McDowell said the firm has been built "on personalized service and integrity." The slogan of the company, he pointed out, is "We Will Be Here Tomorrow to Back Up What We Say and Do Today."

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OHIO

(Continued from page 6)

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DRUGS IN FEEDS—The present trend in the increase of chemical additives to feeds intensifies problems with respect to labeling and analysis, reported W. S. Thompson, Ohio Department of Agriculture, Reynoldsburg. "Our problem is the accuracy and completeness of the labeling on the package, the thoroughness with which the drug is mixed into the feed and the distribution of the product to the feeder," he said.

According to Mr. Thompson, the most common findings are a deficiency or an excessive amount of a drug or the use of another drug other than the one stated on the label. In a few cases, drugs have been found to be present when none is claimed.

Three principal reasons for these discrepancies were noted by Mr. Thompson: (1) Improper mixing, (2) incorrect calculation of the formula and (3) a change in the drug by the manufacturer of the concentrate or premix used.

"The latter is the most prevalent cause for the small mixers' feed being mislabeled," he said. "The manufacturer of the concentrate does not inform the mixer of the change in a drug, or if he does, it is not in sufficient time for the mixer to prepare new labels for his mixes."

Mr. Thompson pointed out that state inspectors find it necessary at times to point out to a mixer that the drug in the concentrate he is using is not the same as stated on his label.

"It is the duty of the manufacturer of a concentrate to furnish this information in some manner to the feed mixer," he said.

"It is evident," he continued, "that an educational program is needed to familiarize everyone on drug usage—the mixer, who should know the importance of proper mixing and labeling; the salesman, who should know the drug limitations, and the farmer, who should know what the drug is that is in his feed."

Mr. Thompson explained that requirements of the Food and Drug Administration, as a part of a new drug application, include a suitable analytical method to be provided by the manufacturers of the drug. The methods provided are satisfactory for the manufacturer's product, but usually are not for the analysis of a finished feed in which the drug is ultimately found, he said. Of more than 40 drugs now in use in animal feeds, there are acceptable analytical methods for less than half and proven methods for less than a third.

THE VETERINARIAN AND THE FEED INDUSTRY—"Close cooperation and effort of both the veterinarian and the feed manufacturers" are needed to fight disease and parasites which "exact a heavy toll on our animal population," said Dr. Russell E. Rebrassier, department of veterinary medicine, University of Ohio, speaking at the convention.

"Misunderstandings have occurred largely by failure to establish direct contacts for discussion," he said. "The chief contact between the veterinarian and feed manufacturers was the owner of livestock, which made friendly relations very difficult, because misinterpretation can easily lead to incorrect relay of facts and use of expressions."

Dr. Rebrassier also made these comments:

"It is especially important at this time that we study our problems because of the far reaching scientific and technological change in animal agriculture. As this change is developing, various methods are being explored to meet the challenge. One of these is called vertical integration.

"What will be the impact of vertical integration on the care and treatment of livestock? This is difficult to predict, but we can be certain that our service to animal agriculture will need to be more than curative medicine. This new program, which is based on profit, will demand service on a herd and flock basis, using the principles of preventive medicine, which include management, breeding, nutrition and preventive medication.

"Cooperation between the feed industry and the veterinarian has been active on the state and national levels.

"Joint meetings of the two groups need to be arranged at the local community level. There is a tendency for more misunderstanding and strife at the local level and it is here that cooperation is so necessary.

"I sincerely believe that the indiscriminate use of medicated feeds without intelligent integration into a complete disease prevention program, supervised by a veterinarian, will greatly limit the level of animal health. I believe that disease prevention offers one of the most promising areas for a major improvement in animal production efficiency . . ."

GOVERNMENT SUPPORTS, CONTROLS—Today's "problem of surpluses" was blamed on "government interference" by Marvin L. McLain, assistant secretary of agriculture, at the convention.

"If farmers are doing well and they are allowed to produce what they want to and when they want to, you (grain and feed men) will get along pretty well," he said. "If government steps in and tries to tell farmers what they must raise or not raise, then this interference will sooner or later catch up with you."

Mr. McLain said the "delayed-fuse effect" from the surplus feed-grain situation "generates a lot of pressure for increased livestock production."

"HOW FREE do we really want to be?" asked Ron Kennedy, vice president, F. H. Peavey & Co., Minneapolis, who described capitalism as "the most powerful force that has ever worked for peace in this world" and "the most powerful force that has ever combatted the evils of inflation."

Mr. Kennedy said, "Somewhere in agriculture there have to be people who believe in capitalism, with all its risks as well as its rewards; who understand capitalism, and who really work at conveying this economic understanding to others."

GEORGIA

(Continued from page 6)

Two specific comments were prevalent, without any prompting from the reporter.

The first was that the auction will make the processors more conscious of selling efforts "instead of taking orders at prices dictated by big food brokers and supermarket buyers."

The second concerned the weekly reports of egg sets and chicks placed in the major broiler producing areas.

A number of producers and feed dealers pointed out such information is of "more value to the buyer than the producer" because the buyers keep track of available supplies sufficiently far in advance to plan big promotions with broilers retailing at prices "almost below cost."

However, none of those interviewed believe publication of the weekly reports is likely to be discontinued within the foreseeable future.

Several feed dealers pointed out that Delmarva prices usually ranged from ½¢ to as much as 2¢ lb. more than North Georgia quotations, and indicated the auction on the eastern shore "may be the contributing factor."

Prevalent, too, was a feeling of optimism about the possibilities and potential of the auction, although Mr. Hodge said that many "problems will have to resolve themselves as they occur. We can't expect to stabilize broiler prices within a few weeks when they have been sagging and staggering for several years."

WHEAT

(Continued from page 1)

the House side, Agriculture Committee spokesmen contend that the only remedy for the wheat problem is to be found in a drastic tightening of acreage controls, a course expected to be unacceptable to the big wheat farm interests.

Sealing off CCC old crop stocks on long term storage agreements, seen as a concomitant of legislative changes, may pose a serious problem for the grain warehousing industry. It must be expected that among proposals which would be submitted either from Congress or the administration and in some aspects from the warehouse industry itself would be offers of space to the government on a bid basis for long periods running, say, from three to five years.

Should such a condition occur, it may be seen that the Uniform Grain Storage Agreement would lose most, if not all, of its vitality and open the door to competitive advantage to warehousemen who are now storing CCC grains in new non-conventional types of storage.

If such amending legislation is to be enacted, it is seen that it must be passed and approved before the May 25 deadline, when the U.S. Department of Agriculture must announce the loan rate for the 1960 wheat crop.

Probabilities that Congress will approve either the multiple price system for wheat or the compensatory payment plan for wheat and other major field crops are dismissed by these Senate sources as completely unlikely.

An acceptable compromise, a move which may be necessary, would be to lower the levels of support to about the line Secretary Benson considers desirable, somewhere around $1.45 bu. or even less, to expand acreage controls and, at the same time, end the 15-acre allotment exemption.

If such a compromise can be reached, it is also probable that Congress may have to amend the farm bill further to close off the availability of wheat in the open market from CCC stocks at the statutory minimum of not less than 105% of the price support level, plus reasonable carrying charges.

MOLASSES

(Continued from page 1)

Hawaiian cane blackstrap production and shipments to the U.S. mainland in gallons during February and cumulative for this calendar year are sharply ahead of a year ago. During January and February of 1959, production was 4.5 million gallons, compared with 1.1 million for the same period a year earlier. Shipments to the U.S. mainland during the two-month period of 1959 were 9,657,225 gal., compared with 3,256,800 a year earlier.

Citrus molasses production in the U.S. is lagging behind last year, according to the report. Production this season through Feb. 28 amounted to 4.1 million gallons, compared with 4.6 million during the same period last year. Movement of citrus molasses has been similarly less than last season, and prices recently have been stable, the report said.

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The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: *Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.*

A AND D FEEDING OIL

Boston: Demand fair; supply adequate; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14⅝¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14½¢.

New York: Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@7½¢ a million units of vitamin A, L.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 25¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

ALFALFA MEAL

Kansas City: No change in market picture. Demand exceeds supply, blenders limiting sales to those who had material booked in many cases because of tight supply; trend steady to stronger; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival: reground pellets $65 sacked, greased meal $67 sacked, pellets $60 bulk; 18% protein, 125,000 A meal $69 sacked, non-guaranteed A meal $62 sacked; suncured alfalfa meal demand is fair with supplies of 15% material tight but 13% being plentiful, No. 1 fine ground 13% protein $35, No. 1 ¼-in. $33.50@34, No. 2 ¼-in. $30.50@31, sacked.

Portland: Demand slow; supply ample; trend unchanged; suncured $41; dehydrated $68.50.

Philadelphia: Demand slow; supply fair; 17% dehydrated $80.

New Orleans: Demand fair; trend unchanged; supply light; vitamin A 17% $79@81; pellets $77@79.

Los Angeles: Demand fair; trend unchanged; supply adequate; dehydrated meal, 17% protein, 100,000 A $51, bulk; dehydrated pellet meal, 17% protein, 100,000 A $53, bulk; suncured meal, 15% protein $42@43, bulk; suncured crumbles, 15% protein $44@45, bulk.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $78.50.

Boston: Demand fair; supply adequate; dehydrated, 17% $78; suncured, 13% $50, nominal.

Ft. Worth: Demand slow; supply sufficient; dehydrated, 20% protein, 150,000 A $67, truck; 17% protein, 100,000 A $64, delivered Ft. Worth area, truck; rail $66; suncured, 13% No. 1 ¼-in. grind $39@40, truck or rail.

Buffalo: Demand and supply poor; trend higher; $82, Boston.

Omaha: Demand strong; supply tight; trend strong; 17% dehydrated, 100,000 A units, bulk pellets $60; sacked meal $65, Omaha basis.

Memphis: Demand fair; trend steady; supply light; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $73.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, truck loads; 133,000 A unit dehydrated $69, truck loads.

St. Louis: Demand slow; trend steady; supply ample; 13% fine $40; dehydrated, 17% 100,000 A $70.

Minneapolis: Fairly tight supplies; demand about equal to supply; trend steady; 17%, 100,000 units vitamin A, reground pellets $70; oiled reground $72; $3 less in bulk.

Chicago: Demand good; supply short; 17% dehydrated, with 100,000 units vitamin A guaranteed $71@73; 13% No. 1 fine ground suncured $40@46.

ANIMAL FAT (STABILIZED)

San Francisco: Demand fair; supply ample; bleachable fancy 7¾¢ lb.; yellow grease 7¼¢ lb.

Louisville: Demand and supply good; trend stronger; bleachable fancy 7¼¢ lb.; white tallow 7¼¢ lb.; yellow grease 6¼¢ lb.

New Orleans: Demand fair; trend steady; supply adequate; 6½@7¢ lb., tank cars.

Boston: Demand steady; supply adequate; tallow 7¾¢ lb.; yellow grease 6¾¢.

Ft. Worth: Demand fair; supply sufficient; prime tallow, tank cars 6¾¢ lb.; drums 8¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

Kansas City: Demand slow; trend steady; supply ample; bleachable fancy tallow 6¾¢ lb., tank cars.

Atlanta: Fair demand; steady trend; ample supply; 7¢ lb., bulk.

Chicago: Demand good; supply short; bleachable fancy tallow, tank truck or carlots 7¼@7¾¢ lb.; yellow grease 6¾@7¢ lb.

St. Paul: Extremely tight supplies and little trading give strong tone to market; bleachable fancy tallow 7¼¢ lb., f.o.b. producer's plant.

BARLEY FEED

San Francisco: Demand fair; supply ample; rolled $65.60, ground $64.50.

New Orleans: Demand slow; trend unchanged; supply adequate; $64@65.

Los Angeles: Demand slow; trend unchanged; supply adequate; standard rolled $3.30 cwt.; standard ground $3.30 cwt.

Boston: Demand slow; supply adequate; $48.50.

Portland: Demand good; supply ample; trend unchanged; rolled $63; ground $61.

Philadelphia: Demand slow; supply fair; pulverized $51.50.

Ogden: Supply normal; rolled $50@55; whole barley $42@47.

Milwaukee: Demand fair; supply good; needles $1.01@1.11 cwt.; ground screenings $25.

Seattle: Demand fair; trend easy; supply good; $52, bulk, truck lots.

Chicago: Demand good; supply adequate; $38.

Baltimore: Demand good; supply adequate; $48.50.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply ample; $120@125.

BLOOD MEAL

Louisville: Demand fair; trend steady; supply good; $120@125.

Portland: Demand good; supply ample; trend unchanged; $130.

San Francisco: Demand good; supply tight; $8 a unit of ammonia.

New Orleans: Demand slow; trend easy; supply ample; $120@125.

Los Angeles: Demand fair; trend strong; supply limited; $7.50 a unit of ammonia.

Ogden: Supply normal; $110 in 100-lb. bags, f.o.b. Ogden.

Chicago: Demand fair; supply light; guaranteed 80% protein $142.50.

BONE MEAL (STEAMED)

Louisville: Demand slow; trend steady; supply light; $95@105.

Portland: Demand good; supply ample; trend unchanged; $100.

San Francisco: Demand good; supply ample; $75.

New Orleans: Demand slow; supply normal; trend steady; $96@106.

Los Angeles: Demand better; trend unchanged; supply tighter; imported $73.50 in 20-ton lots.

Cincinnati: Demand good; trend steady; supply short; $115, Cincinnati.

Boston: Demand and supply steady; $90.

Ft. Worth: Demand good; supply light; $90, f.o.b. Ft. Worth, local manufacture.

Seattle: Demand steady; trend firm; supply good; $87, ex-dock, truck lots.

Chicago: Demand fair; supply light; $90@100.

Buffalo: Demand good; trend stronger; supply limited; $96.

BREWERS DRIED GRAINS

Cincinnati: Demand fair; trend steady; supply adequate; $59.

Boston: Demand fair; supply good; 22% $56, 26% $60.

San Francisco: Demand fair; supply ample; $54.

New Orleans: Demand fair; trend easy; supply ample; $55@56.50.

Los Angeles: Demand fair; trend steady; supply limited; $49.50 bulk, $53.50 sacked.

Ft. Worth: Demand slow; supply moderate; 26% protein $59.80.

Louisville: Demand good; trend steady; supply ample; $54.

Philadelphia: Demand and supply fair; trend unsettled; $60.

Buffalo: Demand good; trend firmer; supply limited; $10.75 cwt.

Milwaukee: Demand good; supply fair; $53.50.

St. Louis: Demand good; trend steady; supply ample; $49.

Buffalo: Demand and supply fair; trend steady; $54.50, bulk, Boston.

Chicago: Demand fair; supply adequate; 26% $51.50@52.50.

BREWERS DRIED YEAST

Louisville: Demand fair; trend firm; supply good; 10@10½¢ lb.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Boston: Demand and supply steady; 11¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Omaha: 10½¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12¾¢ lb., l.c.l.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

BUTTERMILK-CONDENSED

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

New Orleans: Demand fair; trend unchanged; supply normal; $4.25@4.30 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Boston: Demand slow; supply tight; 3½¢ lb.

Ogden: Supply normal; $4.40, 100-lb. drum.

Wichita: Demand good; supply insufficient; $2.90 cwt. in barrels.

Louisville: Demand and supply nil; trend steady; $4.25 cwt., nominal.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Chicago: Demand fair to good; supply adequate; $3.25@3.50 cwt. in carlots.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Los Angeles: Demand better; trend unchanged; supply ample; $10.25.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Los Angeles: Demand fair; trend unchanged; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

San Francisco: Demand steady; supply ample; $141.

Boston: Demand and supply steady; $100.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 in 50-lb. multiwalls.

COCONUT OIL MEAL

San Francisco: Demand good; supply tight; solvent $85.50.

Los Angeles: Demand slow; trend weaker; supply ample; $80.50@82, bulk.

Portland: Demand slow; trend lower; supply ample; $83.50.

Seattle: Demand fair; trend steady; supply ample; $80, via truck, California.

COD LIVER OIL (FORTIFIED)

New York: Demand limited; trend steady; supply fair; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15¼¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@..3¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply adequate; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

CONDENSED FISH SOLUBLES

New Orleans: Demand light; supply limited; trend steady; 50% solid $105@108.

Los Angeles: Demand good; better; trend steady; supply light; 5¢ lb.

New York: Demand good; trend steady; supply tight; 5⅛@5¼¢ lb., f.o.b. eastern shore.

Boston: Demand active; supply scarce; 5¢ lb., nominal.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $59.80, meal $88.80.
Atlanta: Feed $65.98, meal $94.98.
Birmingham: Feed $64.64, meal $93.64.
Boston: Feed $64.84, meal $93.84.
Chicago: Feed $53, meal $82.
Cleveland: Feed $61.14, meal $90.14.
Denver: Feed $63.51, meal $92.51.
Ft. Worth: Feed $61.96, meal $90.96.
Indianapolis: Feed $58.36, meal $87.36.
Kansas City: Feed $53, meal $82.
Louisville: Feed $60.21, meal $89.21.
New Orleans: Feed $63.20, meal $92.20.
New York: Feed $64.43, meal $93.43.
Norfolk: Feed $63.71, meal $92.71.
Philadelphia: Feed $64.02, meal $93.02.
Pittsburgh: Feed $61.96, meal $90.96.
St. Louis: Feed $53, meal $82.

CORN OIL MEAL

Louisville: Demand slow; trend steady; supply ample; $61.45.

COTTONSEED OIL MEAL

San Francisco: Demand good; supply tight; 41% solvent $74.80; 44% solvent $77.70.

New Orleans: Demand slow; supply adequate; trend steady; $75.50@76.50.

Los Angeles: Demand slow; trend steady; supply adequate; $70, bulk.

Boston: Demand fair; supply adequate; $82.

Cincinnati: Demand fair; trend steady; supply adequate; $72.

Ogden: Supply average; 41% $77@82.

Ft. Worth: Demand fair; supply sufficient; 41% old process $71, prompt; pellets $2 additional; cottonseed hulls $12@13.

Kansas City: Demand slow; trend easier; supply adequate; values too high for this area to compete with soybean meal and volume limited to small amount to fill label requirements; old process meal $63.50@64, sacked, Memphis; solvent $61@61.50.

Wichita: Demand fair; supply sufficient; 41% old process $76.

Louisville: Demand slow; trend easy; supply normal; old process $70.50; new process $68.50.

Philadelphia: Demand dull; trend unsettled; supply fair; $79.50.

Portland: Demand slow; trend lower; supply ample; $75.

Omaha: Demand poor; trend weak; supply ample; 41% solvent $64.90, bulk.

Seattle: Demand fair; trend easy; supply ample; $82, truck lots, 41% solvent process.

Memphis: Demand light; trend steady; supply plentiful; prime 41% protein, old process $62.50, sacked; new process, 41% solvent $61, sacked.

Buffalo: Demand poor; trend steady to lower; supply adequate; $82, Boston.

Atlanta: Fair demand; steady trend; ample supply; 41% $67, delivered.

St. Louis: Demand slow; trend steady; supply ample; solvent $65.

Chicago: Demand and supply fair; hydraulic $65.50; solvent $64, basis Memphis.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL,

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb.: 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truck load $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81; 13% phosphorus $64.98, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Cincinnati: 18½% phosphorus $92@93.

Portland: Demand slow; supply ample; trend unchanged; $115.

DISTILLERS DRIED GRAINS

Louisville: Demand good; trend steady; supply fair; bourbon: light $58, dark $59, solubles $77.

Philadelphia: Demand slow; supply light; dark $73.50.

San Francisco: Demand fair; supply ample; solubles $85.

Boston: Demand steady; supply spotty; Canadian medium dark $67; domestic light $68, dark $69.

Cincinnati: Demand poor; trend steady; supply adequate; $59.

Buffalo: Demand fair; trend steady to higher; supply poor; $65, bulk, Boston.

Seattle: Demand fair; trend steady; supply limited; $67, truck lots.

DRIED BEET PULP

Los Angeles: Demand slow; trend steady; supply limited; molasses $52.50@53.60, bulk.

Boston: Demand good; supply adequate; $60.

San Francisco: Demand good; supply fair; $55.50.

New Orleans: Demand fair; trend unchanged; supply sufficient; $57@58.
Ogden: Supply normal; $44@48.
Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, March, plain or molasses $58.33, April $61.33, delivered Ft. Worth.
Portland: Demand good; supply ample; trend unchanged; $54.
Seattle: Demand good; trend firm; supply limited; $49, carlots.
Atlanta: Demand practically nil; steady trend; ample supplies; $65.50.
Buffalo: Demand and supply fair; trend steady; $60.50, Boston.
Milwaukee: Demand good; supply fair; plain $54, molasses $54.

DRIED BUTTERMILK

Louisville: Demand slow; trend steady; supply ample; 12@12½¢ lb.
San Francisco: Demand fair; supply ample; 11½¢ lb.
New Orleans: Demand slow; trend unchanged; supply adequate; $12@12.50 cwt.
Los Angeles: Demand better; supply adequate; trend steady; 11¾¢ lb.
Milwaukee: Fair demand; fair supply; steady trend; $11 cwt.
Buffalo: Demand good; trend firmer; supply limited; $11.85 cwt.
Chicago: Demand fair; supply light; medium acid $10.75@11.25; sweet cream $11@11.50 cwt. in carlots.

DRIED CITRUS PULP

Los Angeles: Demand slower; trend weaker; supply increased; orange pulp $42, bulk; lemon pulp $40, bulk.
San Francisco: Demand and supply fair; meal $54.
New Orleans: Demand fair; trend steady; supply ample; $34@39, f.o.b. Florida.
Boston: Demand slow; supply ample; $37.50, f.o.b. Florida.
Buffalo: Demand and supply fair; trend steady; $35, f.o.b. Florida points.
Atlanta: Fair demand; steady trend; ample supplies; $35@40, meal $30@35, both f.o.b. Florida producing mills.

DRIED SKIM MILK

Louisville: Demand slow; trend steady; supply light; 12@12½¢ lb.
Philadelphia: Demand slow; supply light; $12.50 cwt.
Portland: Demand slow; supply ample; trend unchanged; 13¢ lb.
Los Angeles: Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
Ogden: Supply average; $15.15, 100-lb. drum.
San Francisco: Demand and supply fair; 13½¢ lb.
New Orleans: Demand fair; trend firm; supply ample; $12@12.50 cwt.
Cincinnati: Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.
Boston: Demand good; supply short; 12¢ lb.
Milwaukee: Demand and supply fair; $10 cwt.
Chicago: Demand fair; supply light; $10.65@11 cwt. in carlots.
Buffalo: Demand fair; supply ample; trend steady; $10.65 cwt.
Minneapolis: Good demand; fairly tight supplies; steady trend; $11@11.25 cwt.

DRIED WHEY

Ft. Worth: Demand fair; supply adequate; carlots, standard $6; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.
Kansas City: Demand good; trend steady; supply light; $5.50 cwt., producers' points for regular or partially delactosed.
San Francisco: Demand steady; supply good; $5.75 cwt.
New Orleans: Demand fair; trend steady; supply adequate; $6@6.50 cwt.
Los Angeles: Demand better; trend unchanged; supply ample; $6.10 cwt. in carloads; $6.40 cwt. in l.c.l.
Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.
Boston: Demand steady; supply fair; 5½¢ lb.
Ogden: Supply average; $6.90, 100-lb. bag.
Portland: Demand slow; supply ample; trend unchanged; $7 cwt.
Louisville: Demand slow; trend steady; supply light; 6½@7¢ lb.
Philadelphia: Demand slow; supply light; $6.50 cwt.
Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.
Chicago: Demand fair; supply tight; $5.50 cwt., f.o.b. plant.
Minneapolis: Fair demand; adequate supply; steady trend; $5.50 cwt., producer's plant.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand steady; trend unchanged; supply ample; $1.25 a unit of protein.
Boston: Demand good; supply scarce; $85, f.o.b. shipping points.
Ft. Worth: Demand excellent; supply limited; 85% to 87% protein $112.50, f.o.b. trucks, north Texas plant.
Salisbury, Md.: Good demand; tight supply; $100 bulk, f.o.b. producers' plants.
Atlanta: Good demand; steady trend; tight supplies; $106, f.o.b. Georgia and Alabama producing mills.

FISH MEAL

San Francisco: Demand good; supply tight; $2.35 a unit of protein.
Los Angeles: Demand good; trend steady; supply scarce; local production, 60% protein $2.40 a unit.
Boston: Demand active; supply short; $164, nominal.
Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $172@174.
Ft. Worth: Demand good; limited offerings; 65% Peruvian $158, prompt, f.o.b. Houston.
Louisville: Demand dull; trend unknown; supply nil; $175, nominal.
Portland: Demand slow; supply ample; trend unchanged; $2.25 a unit.
New Orleans: Demand and supply light; trend steady; menhaden, 60% $163@164; scrap 60% $158@159, f.o.b. Gulf.
Seattle: Demand fair; trend firm; supply good; $2.38 a unit protein, truck lots (Canadian production).
Atlanta: Fair demand; steady trend; good supply; Angola meal $164.
Milwaukee: Demand and supply fair; 60% $159.50.
Chicago: Demand fair; supply tight; eastern menhaden fish meal, 60% protein $160, Gulf $160; western blended, 60% protein $180, delivered Midwest; Canadian herring, 73% protein $2.22@2.25 a unit of protein subject to production.
Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $175 bulk, $180 sacked.
Minneapolis: Limited supply; good demand; steady trend; 60% West Coast blended meal $180, nominal, delivered Minneapolis; 70% herring $2.20 a unit of protein, March-April; $2.25 a unit of protein, May-June, f.o.b. West Coast.

HAY

Philadelphia: Demand slow; supply light; $32.
Wichita: Demand improved; supply ample; prairie $15; alfalfa $15@18.
Louisville: Demand dull; trend steady; supply ample; local hay, all varieties, No. 1 $25, No. 2 $23; straw, any variety $25.
Portland: Demand good; trend higher; supply ample; $34.
Los Angeles: Demand fair; trend steady; supply adequate; U.S. No. 1, new crop $37.50@38.50; old crop, U.S. No. 1 $33@35, U.S. No. 2 leafy $30@32, U.S. No. 2 green $28@30, U.S. No. 2 $24@26.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.
Boston: Demand and supply steady; No. 2 timothy $40@42.
Ogden: Supply normal; $1@1.25 bale; $18 ton in the barn.
Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $34@36, No. 2 $32@34; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.
Seattle: Demand and supply fair; trend steady; alfalfa, U.S. No. 2 green $35, truck lots.

HOMINY FEED

New Orleans: Demand slow; supply fair; trend steady; $46@48.
Cincinnati: Demand poor; trend steady; supply adequate; $50.50.
Boston: Demand fair; supply good; $56.50.
Kansas City: Demand slow; trend easier; supply adequate; yellow $36.50@37, bulk, Kansas City; $3.50 for sacks, white $1 less.
Louisville: Demand dull; trend steady; supply light; $50@51.
Seattle: Demand good; trend firm; supply good; $55, carlots.
Buffalo: Demand fair; trend lower; supply good; $51, bulk, Boston.
Milwaukee: Demand good; supply fair; $45.
Memphis: Demand nil; trend steady; supply ample; white $46, yellow $48.
St. Louis: Demand slow; trend steady; supply adequate; yellow $45.
Chicago: Demand fair; supply light; $45.50@46.

LINSEED OIL MEAL

Louisville: Demand slow; trend stronger; supply normal; old process $94.40; new process $89.90.
Philadelphia: Demand slow; trend unsettled; supply light; $93, nominal.
Wichita: Demand slow; supply ample; 34% $86.
Portland: Demand slow; supply ample; trend unchanged; $85.
San Francisco: Demand fair; supply ample; $80.
New Orleans: Demand fair; trend steady; supply ample; $86@88.
Los Angeles: Demand fair; trend steady; supply scarce; local production, 29% protein $76.
Cincinnati: Demand poor; trend steady; supply adequate; $93.
Boston: Demand slow; supply improved; $90.
Ft. Worth: Demand slow; supply adequate; carlots, 34% extracted, March $97, April-May $95; pellets $2.50 premium; truck O. P. $96; solvent $94.
Kansas City: Demand fair; trend steady to firm; supply adequate; solvent $72.50, bulk, Minneapolis; old process $78.
Milwaukee: Demand good; supply fair; old process $86.50; new process $82.50.
Omaha: Demand good; trend steady; supply tight; 34% solvent $78.30, bulk; 32% old process $81.80.
Seattle: Demand fair; trend firm; none available; $90, carloads, 34% protein.
Minneapolis: Tight supplies; fairly good demand; stronger trend; solvent $73, bulk, March; expeller $78, bulk, March.
Chicago: Demand fair; supply tight; solvent $77; expeller $80.50@81, basis Minneapolis.

MALT SPROUTS

Boston: Demand and supply limited; $42.50.
Cincinnati: Demand poor; trend steady; supply adequate; No. 1 $45.
New Orleans: Demand fair; trend steady; supply adequate; $44@46.
Milwaukee: Demand good; supply fair; odd weights $37, even weights $39.
Chicago: Demand fair; supply adequate; No. 1 $41.

MEAT AND BONE MEAL

New Orleans: Demand good; supply ample; trend steady; $108@110.
Kansas City: Demand slow; trend easier; supply light; 50% meat and bone meal $103@105.
New York: Demand and supply fair; trend steady; 50% $95.50, 55% $103, bulk; 50% $98.50, 55% $106, sacked.
Ft. Worth: Demand fair; supply adequate; meat and bone, 50% $97.50@100, f.o.b. or delivered Ft. Worth.
Ogden: Supply normal; $105, in 100-lb. bags.
Portland: Demand good; trend higher; supply limited; $2.05 a unit.
Louisville: Demand fair; trend steady; supply good; $105@115.
Wichita: Demand moderate; supply sufficient; 50% $110, f.o.b. plant; 55%, no quotations, no offerings.
Boston: Demand and supply steady; $1.70 a protein unit; converted 50% $97.50.
Cincinnati: Demand fair; trend steady; supply ample; 50% meat and bone scraps $102.50.
San Francisco: Demand good; supply ample; $1.95 a unit of protein, bulk basis.
Omaha: Demand poor; trend steady; supply ample; $105.
Seattle: Demand good; trend strong; supply limited; $105, ex-warehouse, 50% protein.
Los Angeles: Demand good; trend steady; supply limited; 50% protein $2.05 a unit.
Buffalo: Demand fair; trend easier; supply ample; 50% meat scraps $102.50 bulk, $107.50 sacked.
St. Louis: Demand fair; trend firm; supply adequate; $106.
Chicago: Demand fair; supply light; 50% protein $100@105.
St. Paul: Fair demand; adequate supply; steady trend; 50% meat and bone meal $108@112.

MILLFEED

Minneapolis: Fairly tight market at weekend following weakness early in the week; market is generally a little firmer than other major markets; bran $42.50@43; standard midds. $42; red dog $46.
Kansas City: Demand fair to slow; trend about steady; supply adequate to care for current needs and mills not pressing much feed on market; bran $39@39.75, shorts $40.75@41.50, sacked; bran $35@35.75, middlings $36.25@37, shorts $37@37.75, bulk.
Wichita: Demand slow; supply adequate; basis Kansas City: bran $39.75@40.25, shorts $41@41.50; bran declined 50¢, while shorts were unchanged to 25¢ higher, compared with the preceding week.
Omaha: Demand slow; trend easy; supply ample; sacked bran $40.50; sacked gray shorts $43.50; bulk standard midds. $40.
Ft. Worth: Demand slow; supply sufficient; carlots, burlaps, prompt, bran $47.50; gray shorts $50; bulk middlings $45.50, delivered Texas common points; $1.50 lower on bran, unchanged to 50¢ higher on shorts, unchanged on middlings, compared with previous week.
Chicago: Demand was slow and prices easier during the week ending March 11. Mixers are buying on a short term basis, and show little inclination to inventory materials. Quotations: bran $46.50@47, standard midds. $47, red dog $49.50.
Cincinnati: Demand fair; trend steady; supply adequate; bran $55, middlings $56.
St. Louis: Demand fair; trend steady; supply ample; bran $44.50@45, shorts $46.25@46.75, sacked; bran $39.50@40, shorts $42@42.50, middlings $41.50@42, bulk.
Memphis: Demand poor; trend lower; supply ample; wheat bran $47, gray shorts $48.50, standard midds. $48.50.
Boston: Demand cautious; supply spotty; bran $57.50, middlings $58.
Buffalo: Millfeed sales were quiet last week. An expected upturn in mixer business didn't materialize and current supplies of millfeeds were available. The country trade continued to buy from hand-to-mouth. Pricewise, Buffalo's levels were in a favorable position for eastern buying compared with western levels. Bulk bran, middlings and red dog declined $2; sacked bran, middlings and red dog were off $2.50. Quotations March 11: sacked, bran

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$48@48.50, bulk $42.50@43; sacked, middlings $49@49.50, bulk $43.50@44; sacked, red dog $50, bulk $44.50@45.

Philadelphia: Demand dull; trend unsettled; supply fair; bran $58, standard midds. $58.50, red dog $61.

New York: Demand and supply good; trend lower; bran $56.50@56, standard midds. $56@56.50.

New Orleans: Demand good; trend strong; supply light; bran $52@52.75, shorts $52.50@53.25, sacked; bran $47.50@48.25, shorts $50@50.75, bulk.

Louisville: Demand fair; trend easy; supply good; bran $51.10, mixed feed $52.35, shorts $54.60, middlings $54.30.

Seattle: Demand fair; trend steady; supply limited; $46, common transit points, carlots.

Portland: Demand slow; supply limited; trend unchanged; $44.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $46, middlings $51; to Denver: red bran and mill run $53, middlings $58; to California: red bran and mill run $53.50, middlings $58.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $51, bulk, steady demand, weaker trend, adequate supplies; red bran $53, bulk, slow demand, weaker trend, ample supplies.

San Francisco: Demand good; supply tight; millfeed $54, red bran $58.

MINERAL FEED

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Wichita: Demand moderate; supply sufficient; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

Portland: Demand slow; supply ample; trend unchanged; $42.

Ft. Worth: Demand good; supply light; all-purpose granules $90, block $97; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3¼% granules $87; phosphorus 2% $77 (all in 50-lb. paper bags).

Ogden: Supply normal; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

MOLASSES

Atlanta: Fair demand; steady trend; ample supply; $20, f.o.b. Florida producing mills.

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Memphis: Demand slow; trend down; supply ample; blackstrap 12½¢ gal., tank car, f.o.b. New Orleans, and $29 ton, delivered Memphis, truck.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Milwaukee: Demand fair; supply good; blackstrap 12½¢ gal., f.o.b. New Orleans.

Minneapolis: Fair demand; adequate supplies; steady trend; 12¼@12½¢ gal., New Orleans; $34 ton, tank trucks, delivered Minneapolis.

St. Louis: Demand slow; trend steady; supply ample; 12¼¢ gal., New Orleans.

Kansas City: Demand fair; trend firm; supply adequate; spot offered at 12¼¢ gal., tank cars, New Orleans.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Ft. Worth: Demand good; supply sufficient; blackstrap 13¼¢ gal., f.o.b. Houston; delivered Ft. Worth truck $29.36 ton, seller's market price on date of shipment.

Boston: Demand steady; supply adequate; 16½¢ gal. in tank cars.

Cincinnati: Demand fair; trend steady; supply adequate; 12½¢ gal., New Orleans.

Los Angeles: Demand and trend steady; supply ample; $22 bulk, f.o.b. tank cars; $22.25 bulk, f.o.b. tank trucks.

New Orleans: Demand fair; trend steady; supply adequate; 12½¢ gal., tank cars and trucks; 600-lb. customers' drums $8.33.

San Francisco: Demand and supply good; $22, f.o.b. cars, Richmond, Cal.

Louisville: Demand slow; trend steady; supply good; 12¼¢ gal., tank car lots, f.o.b. Gulf ports.

Seattle: Demand fair; trend easy; supply good; $22, f.o.b. Seattle, tank car lots or truck lots.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Ft. Worth: Demand slow; supply sufficient; oat millfeed $50.70; reground oat millfeed, 4% protein, sacked $31, 3% $28.70.

Boston: Demand and supply steady; white pulverized $56.50; reground oat feed $25.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $51.50; rolled oats $86.

Los Angeles: Demand slow; trend unchanged; supply adequate; pulverized, local production $62.

Portland: Demand slow; supply ample; trend unchanged; rolled $65, ground $62, cleaned $65.

Philadelphia: Demand slow; supply fair; pulverized $55; Canadian oat feed $31.50; domestic oat feed $31.

Louisville: Demand fair; trend steady; supply normal; reground $26.30; rolled $84.30; feeding $78.30; pulverized $53.30; crimped $66.30.

Memphis: Demand poor; trend weaker; supply ample; 3¼% protein, reground oat feed $24.50.

Minneapolis: Demand unchanged; ample supplies; steady trend; feeding rolled oats $77; feeding oatmeal $67.50; crimped oats $55; pulverized down 50¢ to $45.50; reground oat feed $20.

Chicago: Demand and supply fair; reground oat feed $17.50@18.50; fine ground feeding oatmeal $70@72; feeding rolled oats $79@80.

Seattle: Demand and supply fair; trend steady; $53, bulk, truck lots.

OYSTER SHELL

Louisville: Demand good; trend firm; supply normal; in 80-lb. paper $23.45; in 50-lb. paper $23.70; in 25-lb. paper $25.95.

Portland: Demand good; supply ample; trend unchanged; western $34, eastern $38.50, granite grits $28, shell flour $24.

Boston: Demand and supply steady; $26 in paper.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45.

Los Angeles: Demand better; trend unchanged; supply ample; $14.80.

New Orleans: Demand good; trend firm; supply ample; $23.50@24.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand and trend steady; supply good; eastern $36, carlots.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $48.

Atlanta: Fair demand; steady trend; limited supply; 45% $62.50, f.o.b. Georgia and Alabama producing mills.

PEAT MOSS

Chicago: Demand good; supply tightening; $3.75@3.85 standard 7½ cu. ft. bale.

Seattle: Demand fair; trend easy; supply good; $2.50 bale, truck lots.

Boston: Demand and supply steady; $3.15 bale.

Portland: Demand good; supply ample; trend unchanged; $3 bale.

Philadelphia: Demand good; supply light; $2.95 bale, f.o.b. pier.

Los Angeles: Demand better; supply ample; trend steady; Canadian 6.1 cu. ft. bales $3.75.

San Francisco: Demand and supply fair; $3.65 bale.

POTASSIUM IODIDE, U.S.P.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36, freight prepaid to destination.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Atlanta: Fair demand; steady trend; ample supply; $108, f.o.b. Georgia and Florida producing mills.

Ft. Worth: Demand good; supply limited; 55% protein $115, f.o.b. north Texas plants.

Boston: Demand fair; supply tight; $108, f.o.b. shipping points.

Salisbury, Md.: Good demand; tight supply; $100, bulk, f.o.b. producers' plants.

Los Angeles: Demand better; trend firm; supply ample; $1.85 a unit of protein.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb., 3¢ in ton lots or more; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; supply scarce; carlots, rice bran $39, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Los Angeles: Demand fair; trend steady; supply limited; California production, high fat content $59.

San Francisco: Demand good; supply ample; bran $45; polished $49.

SCREENINGS

Ft. Worth: Demand slow; supply sufficient; ground grain $28.

Cincinnati: Demand fair; trend steady; supply adequate; malt house $32; malt sprouts $45, sacked; Canadian $39, bulk.

Chicago: Demand slow; supply adequate; ground grain screenings $36@36.50; Canadian, bulk $31.50.

Minneapolis: Light supplies of both Canadian and domestic material; fair demand; steady trend; lights $10@20; mediums $21@30; heavies $31@40; Canadian bulk $27; Canadian ground $36; flaxseed screenings $35; oil type flaxseed screenings $45, basis 15%.

Buffalo: Demand and supply fair; trend steady; ground, sacked $43.50, New York; unground, bulk $36.50, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUM

Los Angeles: Demand steady; trend unchanged; supply adequate; milo $2.52½ cwt., bulk.

Ft. Worth: Demand slow; offerings light; carlots, bulk, No. 2 yellow milo $2.31@2.32, delivered Texas common points.

SOYBEAN OIL MEAL

Kansas City: Demand fell off again and prices sagged about $1 below a week ago; offerings ample for current needs as mills are buying hand-to-mouth and crushers will not sell forward at present levels; 44% protein meal, bulk, Decatur for Kansas City and western shipment $50@50.50; unrestricted shipment $53@54.

Seattle: Demand fair; trend firm; supply ample; $82, carlots.

Ft. Worth: Demand slow; supply sufficient; carlots, southern origin, 44% March $67.60, April-September $68.60; 50%, March-April $79.80.

Louisville: Demand slow; trend steady; supply normal; $66.20.

Philadelphia: Demand and supply fair; trend unsettled; 44% $54, bulk, Decatur.

Portland: Demand moderate; supply ample; trend higher; $50.50, f.o.b. Decatur.

Wichita: Demand fair; supply adequate; 44% $69, 50% $77, f.o.b. Wichita.

Ogden: Supply average; $81@86.

Boston: Demand fair; supply ample; 44% $52.50; 50% $57.50, both bulk, f.o.b. Decatur.

Cincinnati: Demand fair; trend steady; supply fair; $54, bulk, Decatur.

Los Angeles: Demand limited; trend weaker; supply ample; $75.90@76.40, bulk.

New Orleans: Demand fair; trend steady; supply adequate; $63@63.50.

San Francisco: Demand good; supply ample; $80.40.

Milwaukee: Demand good; supply fair; $53.50, bulk, Decatur.

Memphis: Demand light; trend steady; supply plentiful; prime 44% solvent $60.50, sacked, f.o.b. Memphis.

Omaha: Demand poor; trend weak; supply ample; 44% $58.90, bulk.

Atlanta: Demand practically non-existent; weak trend; ample supplies; $67.50, delivered Atlanta, for 44% meal.

St. Louis: Demand slow; trend lower; supply ample; 44% $64.

Minneapolis: Fair demand, but supplies proved burdensome and the price eased to $47, bulk, Decatur, for 44% meal to Minnesota and $57, bulk, Decatur, for 50%.

Chicago: Soybean oil meal lost considerable ground during the week ending March 11. Demand was extremely slow for nearby. Supplies for future delivery were offered at a premium, and buyers and sellers appeared to be at a virtual stand-off on deferred shipment material. Buyers appear reluctant to book beyond two or three weeks. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $54@55; eastern restricted $50.50@51; 50% bulk, unrestricted $58.50@59; eastern restricted $55.50@56.

TANKAGE

Chicago: Demand fair; supply light; 60% protein $102@108.

Omaha: Demand poor; trend steady; supply ample; $103.

St. Louis: Demand fair; trend firm; supply adequate; $115.

St. Paul: Fair demand; adequate supply; steady trend; 60% digester $106@109.

Kansas City: Demand fair, although not sufficient to strengthen market; hog kills have been larger and a bit more tankage is available; 60% digester $107.50@108.

Ft. Worth: Demand fair; supply scarce; 60% digester $107, f.o.b. Ft. Worth.

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $110.

Wichita: Demand moderate; supply sufficient; 60% $115, f.o.b. plant.

Louisville: Demand fair; trend steady; supply ample; $110@120.

New Orleans: Demand fair; trend steady; supply adequate; $125@127.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; limited offerings; 6%¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100 lb. drums $1.50; in 25 lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100 lb. drums $1.50 lb., 25 lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100 lb. drums $1.50 lb., 25 lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply fair; $79@81.

Chicago: Very good demand for supplies made tighter by reduced running time has moved market up to $82.50.

Buffalo: Demand and supply fair; trend steady; commercial grade $78, f.o.b. Buffalo.

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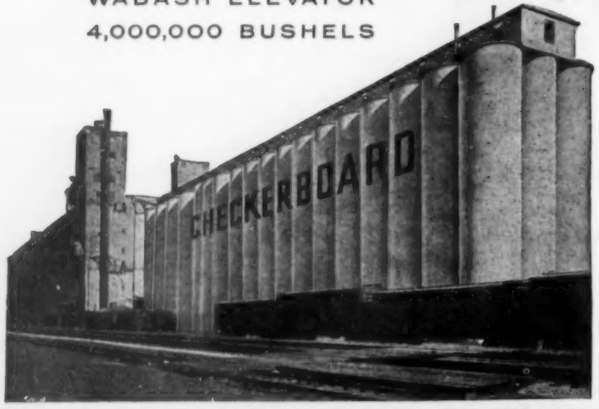

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(Continued from page 1)

complete mixed rations. This difference was due in part to size of animal, since the pigs on the latter rations averaged 20 lb. heavier at the end of the test. In the second experiment, except for the pelleted complete ration, feed required per pound of gain was similar for all treatments. Some wastage was observed with the pelleted complete ration.

Pigs given free-choice access to a supplement containing only soybean oil meal as a source of protein ate more of it than they needed to put on economical gains. For that reason, when that supplement was used, the costs of gain were more favorable for the pigs fed the complete mixed rations.

Grains, Pelleting Studied

Dr. A. H. Jensen, UI assistant professor of animal science, summarized three experiments that compared wheat, oats, barley and milo as substitutes for corn in corn-soybean oil meal rations for growing-finishing pigs fed in drylot. These tests also studied the effects of pelleting on these rations.

When rate of gain produced on a corn-soybean meal diet was used as a standard, the feeding grains listed below had the following values when they replaced corn pound for pound in complete mixed rations for 40-lb. pigs fed in drylot:

Grain	Calculated relative feeding value: Meal ration	Pellet ration	Average
Corn	100	100	100
Grain sorghum (milo)	97	101	99
Wheat	98	99	98
Oats	91	85	88
Barley	46	61	54

Feeding barley and milo rations in pellets resulted in 22 and 8% faster gains, respectively, Dr. Jensen reported, than feeding them in meal form. On the other hand, pelleting did not affect corn and wheat rations very much. Pigs gained slightly less on pelleted oat rations than on the same feed in meal form.

Amount of feed needed for each pound of gain went down when pelleted barley, wheat and milo rations were fed. More of the corn and oat pellets were needed for each pound of gain than of the same rations in meal form, but this difference was due mostly to the extra wasted feed in the pellets.

In one test, when the grain rations were mixed so that the protein content of each was the same, average daily gains were 2.02 lb. for corn, 1.73 lb. for milo, 1.58 lb. for wheat and 1.45 lb. for oats. Pelleting improved the growth record for each of these rations except corn.

Although pelleting improved the feeding value of barley, it was still much inferior to corn in these experiments, Dr. Jensen said. Results of pelleting oat rations have been variable.

Pelleting made the rations easier to handle, particularly by reducing the dustiness and powdery texture of the wheat and milo rations, it was pointed out.

Baby Pigs

J. P. Baker, assistant in animal science, reported on four tests conducted to find out how effective several different iron treatments are in preventing anemia in baby pigs. Two different creep rations were also used for these pigs, which were weaned when they reached a weight of 25 lb.

A creep ration made up of ground yellow corn, soybean meal, dried whey and meat and bone scrap with mineral, vitamin and antibiotic additions put on gains equal to those produced by a formula that included a high level of rolled oats and 10% cerelose sugar added for sweetening, Mr. Baker reported.

A comparison of iron tablets and injectable iron dextran showed weaning weights slightly higher with the latter. Death losses were not much different. Choice between these two treatments probably will depend upon their relative cost and ease of use, he said.

Ferrous gluconate and ferric ammonium citrate were too toxic to be used as injectable sources of iron to prevent anemia. Peptonized iron compounds appeared to be satisfactory sources of injectable iron, but they need further study, Mr. Baker said.

Feeder Space

Surprisingly, limiting feeder space increased rate and efficiency of gain in another test at the Illinois Agricultural Experiment Station reported by Dr. D. E. Becker, professor of animal science. A complete ration fed in self-feeders produced an average daily gain of 1.88 lb. when there were six pigs to each feeder hole. Average daily gain was only 1.69 lb. when similar pigs were fed at the rate of 1⅓ to each feeder hole. Apparently the pigs ate more when there was competition for the feeder holes, Dr. Becker pointed out. Of course, severely limiting the number of feeder holes probably would also cause some undesirable effects.

Results of this one experiment will not support a general recommendation on feeder space needs of 125-lb. pigs, Dr. Becker said. More experiments need to be conducted on this need.

Adding one one-hundredths percent of arsanilic acid to the ration failed to affect rate of gain, feed per pound of gain, backfat thickness and carcass length in this experiment, Dr. Becker reported.

A complete ration produced much higher rate and efficiency of gain than free-choice feeding of shelled corn and supplement, he pointed out.

Antibiotics

Dr. Becker also reported on a series of four experiments conducted to compare the relative effects of various antibiotic combinations and single antibiotics in producing gains in growing-finishing swine fed in drylot.

He summarized the findings as follows: "The data suggest that adding certain antibiotic combinations or some new antibiotics to the rations of growing-finishing swine increases rate of gain above that obtained from a generally used antibiotic, Terramycin. Whether Terramycin has become less effective is not clearly indicated. The response from Terramycin (3.7% increase in rate of gain) was, however, less than had been anticipated on the basis of results obtained in 1952.

"The response from the antibiotics in terms of average increase in rate of gain is given below:

Antibiotic(s)	Per cent increase in rate of gain over control
Terramycin	3.7
Penicillin-streptomycin	12.3
Oleandomycin	11.4
Terramycin-oleandomycin	12.7
Terramycin-streptomycin	10.6
Terramycin-rimocidin	8.4
Erythromycin-thiocyanate (2.5 mg./lb.)	6.4
(5.0 mg./lb.)	11.2
Penicillin-streptomycin-sulfaquinoxaline (0.5 lb./ton)	7.1
(1.0 lb./ton)	8.5

High-Moisture Corn

High-moisture corn compared favorably with low-moisture corn in one test reported at Swine Day.

Average daily gains ranged from 1.44 lb. on corn harvested and ensiled in a wooden silo at 27% moisture content down to 1.35 lb. on corn harvested at 13.5% moisture and ensiled at 40% moisture (water added).

Some moldy corn was found on the top and at the sides of the 27% and 40% corn stored for seven months in a wooden silo. Moldy corn from silos has been reported to have bad effects when fed to hogs, but no difficulty was found in this feeding trial.

Sows fed corn silage during gestation failed to gain weight unless additional ground corn was given to them. Previous reports showed that sows would eat 10 to 12 pounds of corn silage a day. Highest average amount eaten per day in this test was 3.39 lb., although the silage was high in quality. Sows may vary widely in their individual rate of eating silage.

However, when ½ lb. of supplement is fed daily to each sow, either alfalfa silage fed with 2 lb. of corn or alfalfa silage ensiled with 40% corn in it is satisfactory for sows during the latter part of the gestation period.

Results of this test show that sows fed corn silage and 1.5 lb. of supplement daily also need 2 lb. of ground corn in addition to perform satisfactorily.

7,000 CHICKS BURNED

MILFORD, DEL.—Fire destroyed a two-story poultry house and its contents of 7,000 eight-week-old chicks here recently. Losses were estimated at $12,000. The owner, John A. Prettyman, said the Rodney Feed Co., Millsboro, Del., had contracted for the chickens and had suffered about $5,000 of the loss.

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(Continued from page 1)

searcher. In four drylot trials with 159 steers fed for periods of 85, 168 and 175 days, Agrozyme increased net margins over feed costs an average of $8.05 a steer, which was over and above the $2.45 cost of the enzyme premix for each animal (0.0075 lb. per steer daily) over the entire feeding period. This was a return of about $4.28 for each $1 invested in the enzyme. This is the same special enzyme premix presently being used by feed manufacturers in poultry rations containing large quantities of barley. Fungal enzymes also were tested.

Use of the enzyme premix in dry corn produced gains equal to the boost provided by high-moisture corn without premix.

● Tapazole, fed during the last five weeks of a beef cattle finish-feeding program, stimulated liveweight gains by 13% and caused a 12% reduction in feed required for each pound of gain. Although this goitrogen additive still isn't likely to be available soon, Dr. Burroughs said it has a promising future, even for 30 to 60-day feeding periods.

● A tranquilizer—trifluomeprazine—increased daily gains of open heifers about 25% on a full feed of corn silage, when the heifers each received 10 or 20 mg. of the tranquilizer a day in their feed. The gains were equal to those of pregnant heifers also receiving the tranquilizer, but pregnant heifers on no tranquilizer gained slightly better than the highest average gains shown by open heifers getting trifluomeprazine.

● Linseed meal, fed at .7 lb. daily to each steer, increased the hair-coat "bloom" on fattening steers 52% and will be studied further for possible effects on carcass quality.

● Preliminary results show that 9% protein is high enough for best results in a cattle feeding ration containing stilbestrol. This indicates that 1 lb. a day of most of the commercially-available cattle supplements containing stilbestrol is enough to supplement a full feed of ground ear corn or shelled corn, plus hay of average quality. The tests also show that cost of gains can be reduced in cattle supplements by using urea to supply part of the protein equivalent.

● A complete pelleted cattle fattening ration with low-cost roughage making up 12½% of its total weight produced higher liveweight gains in fattening cattle than were produced by standard hay-corn-and-supplement rations, but resulted in an average of $9.67 per steer less market margin above feed cost in two experiments. Ease of handling the pellets and the improved feed efficiency are still worthwhile considerations to be evaluated, however.

● Yearling steers on cornstalk fields each gained an extra 22 lb., worth $5.50, while consuming protein supplement from 40-lb. hard protein blocks at 1 lb. a day, over a 33-day period. The protein cost was figured at $1.92 a steer.

● The net income from beef calves raised entirely in drylot compared favorably with those raised on pasture when the capital value of the land was considered. Beef cows are being maintained successfully 365 days of the year on high-roughage rations, in drylot. This may point to profitable calf production on Iowa farms composed mostly of productive tillable cropland, and could ultimately replace the already-dwindling supply of feeder cattle from the West and Southwest, due to expanded feedlot operations in those areas. Cow numbers in Iowa and surrounding states already have increased 100% in the last few years.

Enzyme Research

(Merck spokesmen said supplies of Agrozyme are now available from the company for large scale experimental purposes with cattle.)

The four feeding experiments with Agrozyme were with four different moisture levels of corn—10%, 14%, 19% and 30%. The grain and hay proportions varied somewhat in each case, but the basal supplement was essentially the same. In the case of the experiment with 14% moisture corn, for example, three lots of six yearling Texas steers each weighing about 750 lb. initially and 1,200 lb. at the end of the test, were fed a full feed of ground ear corn, 3 lb. alfalfa hay and 1 lb. of supplement per steer daily, plus minerals and salt free choice. The supplement to which the enzymes were added was composed of 1,620 lb. soybean meal per ton of supplement, 200 lb. dried molasses, 100 lb. dicalcium phosphate, 50 lb. feeding limestone, 20 lb. Stilbosol, 5 lb. trace mineral premix, and 5 lb. vitamin A (2 million units per pound). Agrozyme was used at 15 lb. per ton of supplement, as well as a higher level of 30 lb. per ton. A control lot received no Agrozyme.

Three other lots in the same 14% moisture experiment were fed a complete mixed feed, which was pelleted.

The Iowa researcher described the enzyme premix as "a specially dried bacterial fermentation product rich in proteolytic (protein digesting) and amylolytic (starch digesting) enzymes dispersed and standardized on a suitable carrier for feed mixing."

Unexpected Response

It was an unexpectedly good response from enzyme additions in one Iowa trial which prompted three additional cattle-feeding trials, All four were included in this year's report.

Dr. Burroughs summarized results as follows:

RESULTS OF FOUR ENZYME EXPERIMENTS: 1. The effectiveness of enzyme (Agrozyme) additions in corn fattening rations for cattle in these experiments was dependent upon the moisture content of the corn fed. When the corn fed contained 14% or less moisture the enzyme additions were quite beneficial. On the contrary, when the moisture content of the corn was 19% or higher, little or no benefit was obtained from the enzyme additions. These results suggest that whenever corn is sufficiently dry for year-around safe storage, its feeding value for fattening cattle will be improved by enzyme (Agrozyme) supplementation. This would include most corn fed to fattening cattle. Conversely, soft corn or high-moisture corn such as that stored in a silo and fed to cattle probably will not be improved by enzyme additions. The most effective Agrozyme level of supplementation for dry corn feeding was 0.0075 lb. per animal daily, which was supplied by adding 15 lb. of the enzyme premix per ton of supplement when the supplement was fed at the rate of 1 lb. per steer per day.

2. The cattle benefits of the enzyme additions to fattening rations containing dry corn were: (1) Increased liveweight gains averaging 12%, (2) slightly improved appetite resulting in 4% greater feed consumption, (3)

256 FEWER HATCHERIES IN YEAR'S TIME

KANSAS CITY—According to a recent count of the American Poultry & Hatchery Federation there are 4,934 hatcheries in the U.S. This is a net decline of 256 establishments compared with a year ago, and represents a continuation of a trend in which the number of hatcheries has been declining and the average size of hatcheries increasing.

During the past 12 months 351 hatcheries went out of business and 95 new ones were started. In the previous year there was a net decline of 633 hatcheries. Two years ago the net loss was 272.

The APHF said the 1958 decline was greatest among smaller hatcheries with less than 35,000 capacity. More than half were in that group. Ninety percent had capacity of less than 100,000. Most of them sold flock replacement stock. Twenty per cent sold broiler stock and 5 per cent sold turkeys.

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feed savings per unit of gain averaging 7%, (4) equal or improved beef carcass quality, and (5) increased margins over feed costs averaging $8.05 per steer in the dry corn experiments conducted to date. The difference in cost between feeding a $117 ton supplement containing 15 lb. of Agrozyme as compared to feeding a $90 ton supplement without enzymes amounted to $2.45 per steer over about a 6-month feeding period. This $2.45 cost was returned when the cattle were sold, plus the $8.05 margin per steer over feed costs as a result of enzyme feeding. This represented a return of $4.28 for each dollar invested in the enzyme mixture added to the dry-corn cattle-fattening rations.

3. The beneficial response resulting from enzyme additions to dry corn in the present cattle experiments and the lack of response of these same enzyme additions to wet-corn rations offer a clue as to why high-moisture corn in previous cattle experiments had feeding value superior to that of corn containing approximately 14% moisture. In these previous cattle experiments the high-moisture corn averaged 8% greater feeding value than the dry corn. In this report the high-moisture corn had 7% greater feeding value than the dry corn without enzyme supplementation, whereas with enzyme supplementation the two kinds of corn had identical feeding value.

4. Since the present results appear to be the first reported experimental work with enzyme additions to fattening cattle rations, there are many unanswered questions needing investigation. For example, one unanswered question is whether or not enzyme additions will prove beneficial in other types of cattle rations other than dry-corn fattening rations. Will they be effective where barley, sorghum or other cereal grains are used in cattle fattening rations? Also, will enzyme additions be helpful in growing cattle rations composed chiefly of roughage with little or no grain? Further research is needed in answering these questions. Other questions that need answering pertain to the amount of supplement fed and whether it contains stilbestrol. In all of the dry corn experiments, stilbestrol was fed. Another question is what is the mode of action by which enzymes benefit cattle? Is it one enzyme, two enzymes or a specific combination of enzymes which is most effective? Will enzyme mixtures other than Agrozyme prove beneficial in cattle rations? The answers to these questions are not fully known at present and need investigation. There are many types and sources of enzymes and enzyme mixtures. One can speculate that some are likely to be totally ineffective, some other products partially effective and some other enzyme preparations may be highly effective, as Agrozyme is. Only this one enzyme preparation (Agrozyme) has given benefits in the present research and this has been when used in a specific cattle ration, namely, a heavy corn fattening ration in which the moisture content of the corn was 14% or less.

TAPAZOLE TRIALS: Eighty steers were used in these tests last May and June and last January and February. Dr. Burroughs pointed out that in previous experiments when Tapazole was fed during the first four to eight weeks of a feeding period it had stimulated cattle gains as much as 20 to 25 lb. The stimulation in the last five weeks in the recent experiments amounted to 10 lb. per steer in one experiment and 12 lb. in the other.

There can be no doubt, however, he said, that Tapazole will stimulate liveweight gains "substantially" for a 30 to 60-day feeding period. If future experiments continue to be as promising as present experiments, he said, it's likely that Tapazole could be used profitably in future cattle production.

Carcass grade and yield on the Tapazole cattle in the experiment ending last June were slightly less than on the control lot, and in the other experiment the Tapazole cattles' carcasses graded slightly higher making the grade and yield average about equal over the two experiments.

TRANQUILIZERS, ETHANOL RESULTS: A tranquilizer — trifluomeprazine — increased daily gains of open heifers about 25% on a full feed of corn silage, when the heifers received 10 or 20 mg. of the tranquilizer per day per animal, it was reported.

Pregnant heifers gained as well in all lots as their companion open heifers receiving trifluomeprazine. The pregnant heifers receiving no tranquilizer appeared to average slightly better gains than the highest average gains shown by the open heifers getting trifluomeprazine.

Open heifers receiving only 5 mg. of trifluomeprazine per day showed no advantage in gains over the open heifers receiving no tranquilizer. Steers on ground ear corn receiving 5 mg. of the trifluomeprazine showed no benefit from the tranquilizer.

Dr. Burroughs said the limited number of open heifers on which the tranquilizer was used points to the need for verification of these results in other experiments before any conclusion is made. Trifluomeprazine at higher levels should also be tested again for steers, he said. Trifluomeprazine is not on the market now and is being investigated further.

Good to choice feeder steers receiving 3 oz. of alcohol (ethanol) per head daily gained an average of 0.11 lb. more per head daily and required an average of 21 lb. less feed per 100 lb. of gain than similar steers without the alcohol supplement in an experiment completed last summer.

However, the feed cost of gains was not reduced for the alcohol-fed cattle. Selling price of the alcohol-fed cattle was the same as for the control cattle, but the alcohol-fed cattle averaged about one tenth higher in carcass grade.

A tranquilizer experiment completed last summer showed daily gains were slightly lower for tranquilizer-fed cattle than for the control cattle. The tranquilizer-fed cattle required about 2% more feed per pound of gain. However, the dressing percent and carcass grades were slightly higher for the tranquilizer-fed cattle. The tranquilizer used in this trial was Tran-Q. Dr. Burroughs said more research is needed with the alcohol additive and the tranquilizer to determine their value in a cattle fattening ration.

LINSEED MEAL SUPPLEMENTS VS. UREA-OILMEAL SUPPLEMENTS FOR FATTENING CATTLE: Three objectives were considered in this experiment, according to C. E. Summers, an Iowa State researcher. The first related to the amount of protein supplement needed in fattening cattle rations which contain stilbestrol and limited amounts of excellent quality alfalfa hay. The second was to determine the relative merits of a urea-oilmeal supplemental mixture as compared to a linseed meal supplemental mixture containing no urea. The third objective was to determine whether linseed meal imparts a "bloom" to the hair-coat of fattening cattle when the supplement contains stilbestrol.

Seven tenths of a pound of linseed meal daily per animal increased the hair-coat "bloom" on fattening steers 52%, Mr. Summers reported.

He said the measurements were made with a light meter designed specially for the purpose. Steers receiving three tenths of a pound of linseed meal a day had 10% more bloom in their hair coats than cattle not receiving the linseed meal. Increasing the allowance to 1.4 lb. per day increased the bloom to 60% over that on steers receiving no linseed meal.

Mr. Summers pointed out the experiment has about two more months to run before the cattle are finished for market. Carcass data will be analyzed then to see if the linseed meal had any effect on carcass quality.

Analysis of results thus far in the same feeding trials shows that 9% protein is high enough for best results in a cattle feeding ration containing stilbestrol. He said this indicates that 1 lb. per animal daily of most of the commercially available cattle supplements containing stilbestrol is enough to supplement a full feed of ground ear corn or shelled corn plus hay of average quality.

The tests, he said, also show that costs of gains can be reduced in cattle supplements by using urea to supply part of the protein equivalent. Rate of gain and feed required per 100 lb. gain were similar in the two groups of cattle. The most significant difference brought about by the urea-oilmeal mixture was the reduced cost of gain. With urea the cost was 14.8¢ lb. of gain compared with 15.4¢ lb. in the case of the linseed meal mixture containing no urea. These results substantiate earlier results indicating that good performance is obtained when urea comprises a part of the cattle supplement and that this use of urea may lower costs of beef production, said Mr. Summers.

PELLETING: A complete pelleted cattle fattening ration with low-cost roughage making up 12½% of its total weight produced higher liveweight gains in fattening cattle than were produced by standard hay-corn-and-supplement rations, but resulted in an average of $9.67 per steer less market margin above feed cost in two experiments.

Researcher Summers said the experiments were conducted in an attempt to learn whether the use of low-cost roughages in the pelleted ration might bring the cost of the pellets down to a point where pellets could be economically used in a fattening cattle ration. A ton of the pellet mixture contained 1,362 lb. ground ear corn, 250 lb. corn cobs or oat hulls, 125 lb. molasses, 100 lb. dehydrated alfalfa meal, 100 soybean meal, 25 Bentonite, 10 dicalcium phosphate, 10 limestone, 10 salt, 6 urea, 1 stilbestrol and 1 trace mineral premix.

The control ration consisted of a full feed of ground ear corn with 3 lb. hay and 1 lb. supplement per steer daily. Feed consumption was slightly lower for the pellet-fed cattle and feed conversion averaged 8% better for the pellet-fed cattle. However, feed costs per pound of gain were 1.2¢ higher for the pellet-fed cattle. The cost of handling and pelleting the pelleted feed was figured at $7 ton.

Mr. Summers said the ease of handling the pellets and the improved feed efficiency resulting from the use of pellets are both worthwhile considerations. He said more research is needed to develop economical ways of making use of the pelleted rations for cattle.

PROTEIN BLOCKS: Encouraging response from use of protein blocks in cornstalk fields was reported by S. A. Ewing, an Iowa State livestock specialist who also reported on dry-lot calf production work.

He pointed out it has been established that feeder cattle gleaning corn fields need protein supplement in order to gain weight most efficiently. Cattlemen have not provided the supplement because of the expense and trouble involved in providing feeders and distributing protein supplement daily. He noted, however, that western range producers in many cases are using a hard protein block for this purpose. This is convenient because it can be set out and left in the field like salt.

In the trial near Ames, he said, he used protein blocks that were too hard for the cattle to bite. They could lick off no more than about a pound per animal daily. The blocks used contained 37% cottonseed meal, 38% soybean meal, 10% salt, 5% dicalcium phosphate and 10% molasses.

Yearlings that had access to these blocks gained an average of 22 lb. more per head during the 33-day period in the stalk field than did similar yearlings not receiving protein supplement. Mr. Ewing said the estimated value of the cattle coming off the stalk fields into the feed lot was $25 cwt. This made the 22-lb. gain worth $5.50. Protein block cost was figured at $96 ton, which figured out to $1.92 per animal for the time the block was used. This made a return of $2.87 for each dollar invested in the protein blocks.

COMMENTS: During a press conference prior to the feeders day program, Dr. Burroughs made several additional points. Among them: Agrozyme now gives cattle feeders a "two-way" choice in handling their corn—they can store it dry in conventional facilities for feeding (with the enzymes), or they can sell it; or, they can go to the high-moisture storage plan with silos. The feeding results are almost identical.

Are the effects of stilbestrol, Tapazole, Agrozyme and other additives "additive" in their usage, he was asked. "Yes," the Iowa researcher replied, "a total of 35% or more gain stimulation is probable."

He also commented later that it is possible that "older" corn than that used in the current trials reported might give as much or more feedlot response than "newer" corn when the enzyme is added.

Dr. Burroughs also gave a "box score" of college and university tests of cattle feed additives for the fattening stage of production, as well as what he termed the present outlook for benefits for the cattle industry in these additives on the basis of test results:

"Antibiotics, 15 colleges, outlook fair; stilbestrol, 20 colleges, outlook excellent; live rumen cultures, 4 colleges, outlook poor; chemobiotics, 8 colleges, outlook poor; tranquilizers, 5 colleges, outlook fair; Tapazole (for 35 to 80 days), 2 colleges, outlook good; alcohol, 3 colleges, outlook poor, and enzymes (in dry corn ration), 1 college, outlook good."

OUTLOOK: Francis Kutish, Iowa State College agricultural economist, gave a brief outlook on beef cattle prices to draw the feeders day to a close. "You could chalk up 1959 as corresponding to a green light," he told cattlemen. "If you don't bunch up your marketing, you could come out all right. There seems to be a shortage of the better grades of meat. This means that 1959 could well turn out with the best average prices of any year in the current cattle cycle."

He added, however, that 1960-61 might be considered the years of the "yellow light," during which caution should be exercised against a tendency to give a little more for feeder calves than might be warranted. The years beyond 1961 could well be considered in the "red light" category at present, however, he said.

MARKETS

(Continued from page 2)

crease each week. Cattle and dairy feed business continues on the slow side and many feed manufacturers report that they are only doing about one fifth the business they were doing 30 days ago.

Florida reports a surplus of milk, and the dairies are not pushing the cows at this time for increased production.

It is reported that supplies of corn are backing up at the Guntersville and Chattanooga terminals resulting in prices dropping 2¢ bu. this week. Ingredient buyers continue to buy the major proteins on a hand-to-mouth basis, and dealers are offering resale cottonseed meal and soybean meal in some cases as much as $2 ton under the mills' asking prices.

The $2.50 ton advance on citrus pulp last week is beginning to slow down the movement. However, the processors are not too much concerned as they will be on slow running time for about the next three weeks.

Central States

Feed business remained fairly seasonal during the week ending March 11, manufacturers said—not too bad and not too good. Sales are estimated to be running ahead of the same period last year, and some indications are appearing that a spring pickup is getting under way.

Prices are fairly steady on finished feeds, although some ingredients turned lower during the week. Feeding ratios are not as good as in the last quarter of 1958, reports indicate, but still permit good feeding practices. Mills generally are running on a 40 hour week.

Starting feeds are beginning to move for turkeys, chicks and pigs, forming a groundswell of improvement. Cattle feed is expected to show excellent volume during the last weeks in March and during April and May.

South Central

Formula feed demand has been a little disappointing this week. Sales were equal to or possibly a little better than those of the past two weeks, but they are not expanding as expected. The general line of feeds is moving fairly well. Hog feeds are doing a particularly good job considering the substantial hog marketings now taking place. But misgivings are being expressed about chick starter sales. Buyers have shown very little interest in these feeds so far this season.

Reports from hatcherymen about the number of chicks they are placing are not encouraging. Egg prices are too low to interest the small flock owner and many of them apparently have given up the intention of having a flock this year. On the brighter side is the steadily improving pig feed demand.

Most of the plants are continuing on with a five day run although some of the larger units have dropped back to 4 to 4½ days. Price lists will be lower, especially on concentrates.

Ohio Valley

Continuing improvement in demand for starter feeds of all types was noted this week in the Ohio Valley, although the tonnage upturn is relatively moderate compared with what is anticipated within a few weeks. A late-winter snowstorm of several inches early this week tended to bring all seasonal farm activities to a virtual halt, while, at the same time, serving to create increased demand for formula feeds.

Numerous reports of depressed conditions in the egg and poultry markets because of over-production were discounted by most area manufacturers. "There always are periods of over-production," said one manufacturer, "but this situation is quickly adjusted when some of the hatcheries close down for a brief period."

At any rate, the USDA reported this midweek that live poultry was "in short supply" with eggs holding steady to off 1@2¢.

Pacific Northwest

Feed ingredient quotations this week averaged lower during Pacific Northwest trading which saw losses for soybean meal, wheat millfeeds, whole barley and oats contributing most to the weaker situation, trade sources indicated at Portland and Seattle.

Market offerings of all ingredients appeared adequate for the present demand which was primarily on a nearby basis.

Movement of formula feed was maintained during the period with mixers reporting a good volume of poultry sales. Dairy feed sales were somewhat affected by the fact that weather conditions continued on the moderate side with many pastures drying out to the extent a limited use was possible.

Soybean meal prices were down $1.50 ton while wheat millfeed listings were off $1 ton. Meat meal listings were unchanged to as much as $2.50 ton lower in front of slow buying interest.

Whole barley values closed 50¢ to $1 ton lower while oats prices were 50¢ off with corn and milo prices holding unchanged.

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April 13 Opening Of Lake Navigation At Buffalo Expected

BUFFALO—The opening of the commercial navigation season in Buffalo harbor is likely to occur April 13—later than normally expected because of heavy ice conditions in Lake Erie, the U.S. Coast Guard has indicated.

Coast Guard records show the "average" opening date for Buffalo is April 11. Last year the season opened here April 3.

Comdr. W. A. Burso, officer in charge of marine inspection for the Coast Guard here, released the first of periodic reports on ice conditions in the Great Lakes prior to the navigation season.

CSS Sales Manager Dies Unexpectedly

WASHINGTON—Frank C. Daniels, general sales manager of the Commodity Stabilization Service, died unexpectedly March 2 as he prepared to leave for his office. He was well known throughout the grain and feed trade.

Mr. Daniels was appointed general sales manager of CSS, vice president of the Commodity Credit Corp. and special advisor to the CCC board of directors in 1953 by Ezra Taft Benson, secretary of agriculture. His primary responsibility was to expand and strengthen the sales efforts in moving CCC stocks.

Before entering government service, Mr. Daniels was secretary and general manager of Cooperative Feed Dealers, Inc., Binghamton, N.Y., a post he resigned late in 1953 after having been with the organization since 1936. Prior to that he spent several years in the sales departments of agricultural product manufacturers, including a period as assistant sales manager for one of the largest feed manufacturing companies in the eastern part of the country.

To Retail Feed Mixers and Dealers—

Are You Looking for Answers to These Pressing New Questions?

- ☐ How can I organize my business to take advantage of modern selling and marketing conditions?
- ☐ What value would a connection with a large manufacturer have for me?
- ☐ How can I finance laying flocks and hog projects in my area?
- ☐ How do I go about assuring a market for my customers' eggs?
- ☐ How can I help my swine raisers obtain meat-type pigs?
- ☐ How can I keep abreast of modern medications and formulas?
- ☐ Where can I get the specialists to supervise my financed projects to make certain they are doing well?
- ☐ Where does insurance fit into the financing picture? Are mortgages necessary?
- ☐ Will the number of dairymen decline in my area, too? How can I help them stay in business?
- ☐ How can I solve the big problem of cost-accounting on financed projects?

These are everyday problems that we at Staley Milling Company meet with our customers all the time. Perhaps we can help you meet these same problems or others that may face you.

Check the questions above which are of greatest concern to you; tear out this page and mail it to me with your name and address.

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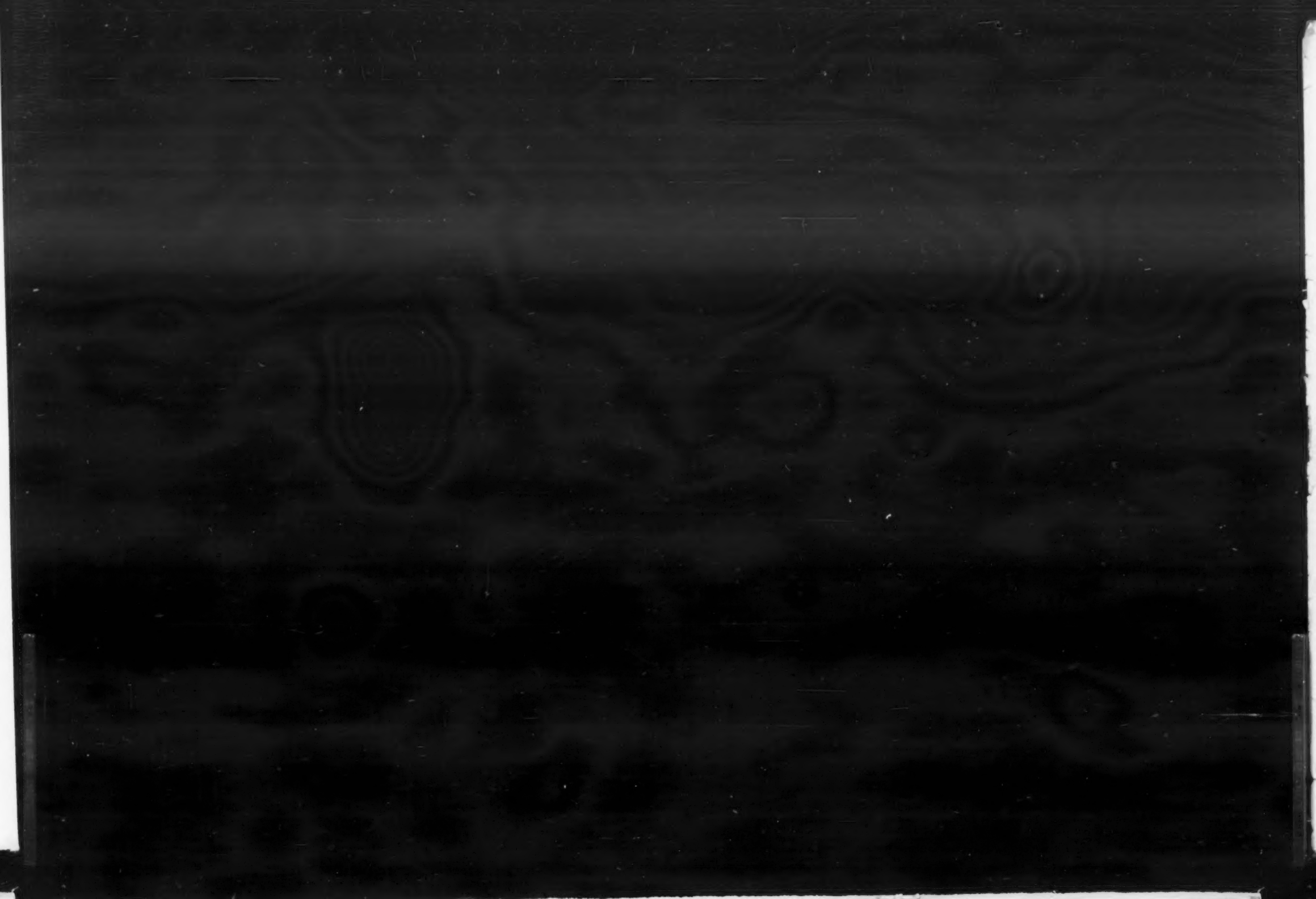
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